SAMSUNG
Electronics

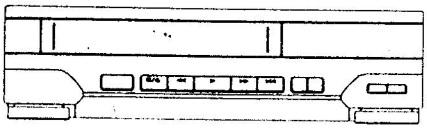
VHS
PAL SECAM

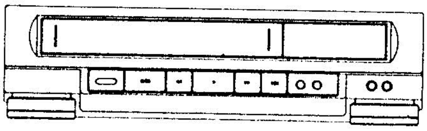
SERVICE MANUAL

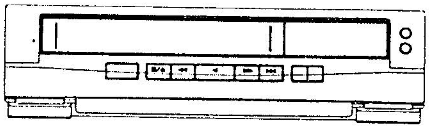
SVM-PXIII-003-1E
68139 - 262 - 103

MODEL : VK-30R/31R/32R
PK-30R/31R/32R

VIDEO CASSETTE LINE RECORDER
VIDEO CASSETTE PLAYER


VK/PK-30R


VK/PK-31R


VK/PK-32R

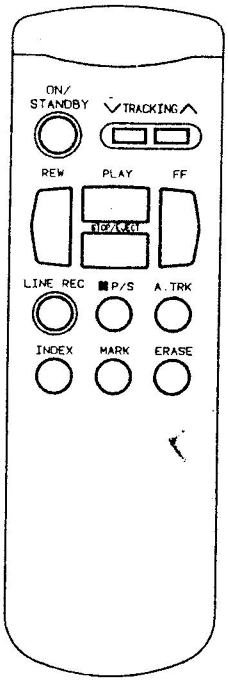
SPECIFICATIONS

Video Recording System : 2 Rotary Heads, Helical Scanning System
Luminance ; FM azimuth recording
Color ; Down converted subcarrier phase shifted
Television System : CCIR Standard
Color System : PAL, MESECAM, SECAM
Tape Width : 12.65mm (1/2 inch)
Tape Speed : SP ; 23.39mm/sec.
Record/Playback Time : SP ; 4 hours with E-240 tape
FF/REW Time : Less than 5 min with E-120
Heads : Video ; 2 Rotary Heads
Audio/Control ; 1 stationary head
Erase ; 1 full track erase

Video
- **Input** : 1.0Vp-p ; 75 ohm unbalanced
- **Output** : 1.0Vp-p ; 75 ohm unbalanced
- **Signal-to-Noise Ratio** : Better than 40 dB (SP)
- **Horizontal Resolution** : More than 220 Lines (SP)

Audio
- **Input** : Line ; -8dBm, 50 Kohm unbalanced
- **Output** : Line ; -6dBm, 1 Kohm unbalanced
- **Signal-to-Noise Ratio** : More than 40dB
- **Frequency Response** : 100Hz ~ 8KHz
- **Receiving Channel** : UHF ; Channel 30 ~ 39 (preset CH36)

Power Requirement : 100 ~ 240V AC/50Hz, DC 12V
Power Consumption : Approx 17 watts
Operating Temperature : 41 ° F ~ 104 ° F (5 ° C ~ 40 ° C)
Operating Humidity : 10 % ~ 75 %
Weight(net) : 3.5Kg
Dimensions : 330 (W) x 87 (H) x 225 (D) mm



Printed in Korea

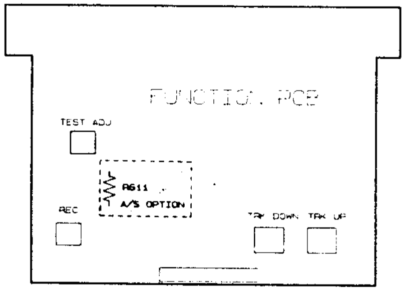
OCT. 1992

IMPORTANT SERVICE NOTICE

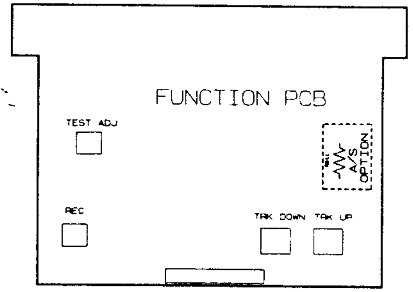
1. Service Option

For this chassis of VCR, the sensor (start / end / reel) are located on the Main A PCB not in the deck assembly. There is a important service option that has to be followed to repair Main A PCB without "deck assembly" connected. To imitate the function of the sensor, insert resistor 51 KΩ at the location of R611 on the Function PCB. See diagram below.

Note : After connecting extension cable 4 between deck assembly and Main A PCB, to make a cassette load, cover start sensor, then press and hold a cassette in the housing assembly.



VK/PK-30R 32R (TOP SIDE)



VK/PK-31R (TOP SIDE)

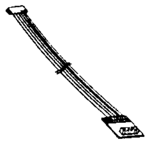
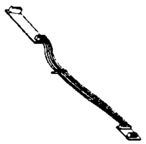
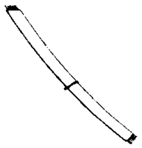
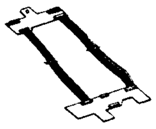
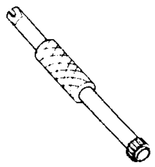
Note : After repairing completely, be sure to remove resistor 51 KΩ at the location R611 on the Function PCB.

2. How to use the Service Jig

To have extended service ability for this unit, you must purchase the "Service Jig for X-3 Chassis VCR".

Note : This service jig can be used for several models of Samsung VCRs. Please keep it for future use.

Jig Item	Code NO.	Description	Sketch NO.
Extension			
Cable 1	68140-300-112	Use for Cylinder Motor ↔ Main B PCB (CN501) Connecting Cable	A
Cable 2	68140-300-111	Use for Regulator (CN001) ↔ Main A PCB (CN701) Connecting Cable	B
Cable 3	68140-300-106	Use for A/C Head (CN001) ↔ Extension Cable 4 Connecting Cable	C
Cable 4	68140-300-107	Use for Deck ↔ Main A PCB (CN302, CN702) Connecting Cable	D
Special Driver	68140-500-100	Use for X-Point Adjust / Tape path Alignment	E

A : CABLE 1	B : CABLE 2	C : CABLE 3	D : CABLE 4	E : SPECIAL DRIVER
				

1-2. GENERAL INFORMATION

• Operation Modes
Play, pause/still, forward picture search, reverse picture search, high speed forward (reverse) picture search, fast forward and rewind and auto rewind, auto repeat/shout off, line recording.

• VISS
– VHS Index Search System
Index search system is the function of searching swiftly previously designated points of interest on the tape using the index signal.

– Intro Scan
This functions plays back the tape for about 8 seconds at each section where the index signal was registered during fast forward or rewind.

– Marking Index Points
In play mode, press the "MARK" button on the remote hand unit to record an index point on the tape the index indicator will blink on the display.

– Erasing Index Points
During play mode, press the "ERASE" button and the unit will engage in visual search forward until an index point is reached, the index point will then be erased and the "INDEX" indicator will blink, the unit will then resume the play mode.

• Automatic Power On
The VCP will automatically turn power on when you insert a cassette tape without pushing power or play button.

• Automatic Rewind
The VCP automatically rewinds when the tape is reached to the end.

• Auto Power Off
At the first portion of tape after rewind, it turns to power off automatically.

• Remote Control With Special Effects
Hand-Held unit offers Play, Stop/Eject, Rewind, Fast forward, Pause/Still, Power On/Off, One touch picture forward or reverse, Index, Mark, Erase, Tracking/V-Lock, Line Recording.

• Quick Start
This is to shorten the switching time from stop mode to play mode by having the tape deck fully loaded.

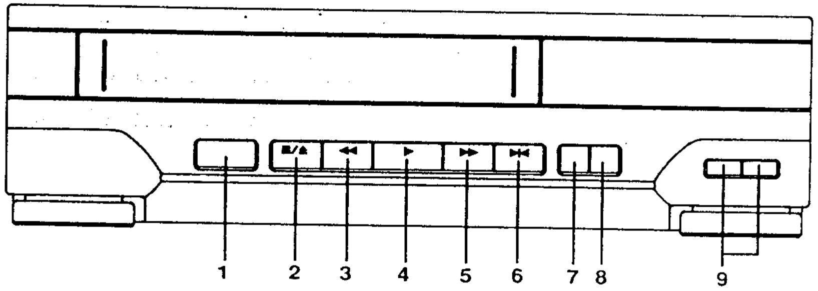
• Automatic Digital Tracking
This function automatically optimizes a clearer picture in playback mode.

• Line Recording
This unit can line recording by using A/V jack.

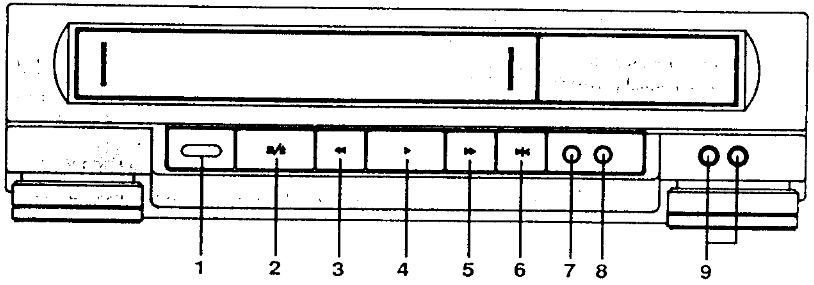
• Free Voltage (SMPS)
Usable voltage is in the range of 100V ~ 240V.

1-3. OPERATING CONTROLS AND FUNCTIONS

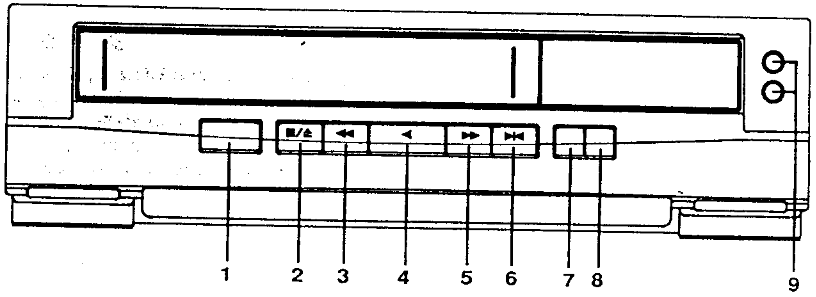
1-3-1. FRONT VIEW



VK-30R/PK-30R



VK-31R/PK-31R



VK-32R/PK-32R

1 ON/STANDBY BUTTON

Push this button to turn power on or standby.

2 STOP/EJECT BUTTON

Press to stop the tape.
In the stop mode, press to take out the tape.

3 REW (REWIND/REVERSE PICTURE SEARCH) BUTTON

Press to rewind the tape. In the play mode, press for high speed reverse picture search.
Press again this button for jet search.
Press PLAY to revert to playback.

4 PLAY BUTTON

Press to playback prerecorded tape.

5 FF (FAST FORWARD/FORWARD PICTURE SEARCH) BUTTON

Press to fast forward the tape. In the play mode, press for high speed forward picture search.
Press again this button for jet search.
Press PLAY to revert to normal playback.

6 P/S BUTTON

Press to stop the tape temporarily during playback or recording.

7 AUTO REPEAT/SHUT OFF BUTTON

You can experience AUTO REPEAT PLAY or AUTO SHUT OFF after rewind with this button.
This unit will auto repeat play when the AUTO REPEAT LED is lighted by pressing button.
The unit will do auto shut off when the AUTO REPEAT LED is out by pressing button.

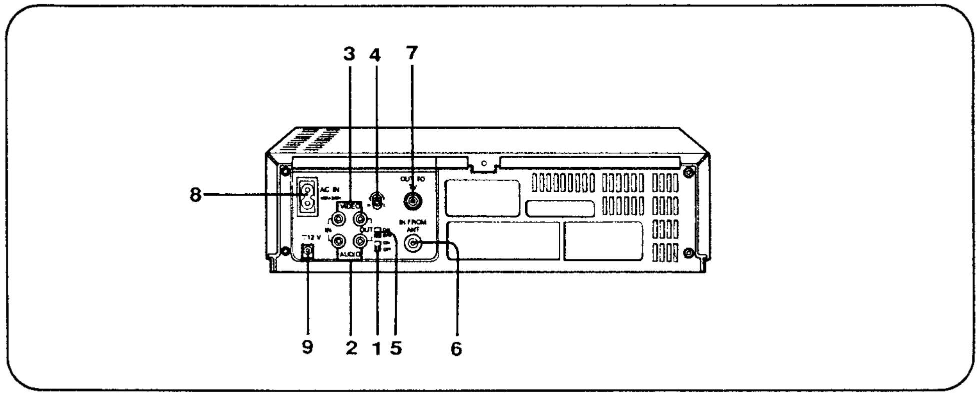
8 REC BUTTON (ONLY FOR VK-MODELS)

Press to start line recording.

9 TRACKING ∧ V BUTTON

Press this buttons to remove picture noise in playback mode. In still mode, adjust this control to minimize vertical shaking on the TV screen.

1-3-2. REAR VIEW



1 TEST ON/OFF

Turn this switch ON and check that video channel of your TV set is correct.
After setting, set this switch to OFF.

2 AUDIO OUT

To connect sound equipment, another VCR or TV monitor with AV jack.

AUDIO IN (ONLY FOR LINE RECORDING MODELS)

For connecting an audio cable from a component audio system or an output signal of another VCR.

3 VIDEO OUT

To connect to TV monitor or another VCR.

VIDEO IN (ONLY FOR LINE RECORDING MODELS)

For connecting the video cable from another VCR.

4 RF CHANNEL PRE-SET

In some area, the pre-set RF output of your unit may clash with a TV broadcast. If this occurs, rotate this control using a small screwdriver in a clockwise or counter-clockwise direction. A new video channel has now been set and you will need to retune your television video channel to the new RF output.

5 B/G, D/K MIDE SWITCH (PRE-SET B/G MODE)

According to this switch select position you can playback prerecorded tape not only by D/K broadcasting but B/G broadcasting.

6 ANTENNA IN

Connect external antenna.

7 RF OUT

Connect to TV antenna (aerial) input.

8 AC IN

Permits AC power source connection of your unit by AC power cord.

9 DC POWER JACK

Permits power source connection of your unit to a DC battery or car battery.

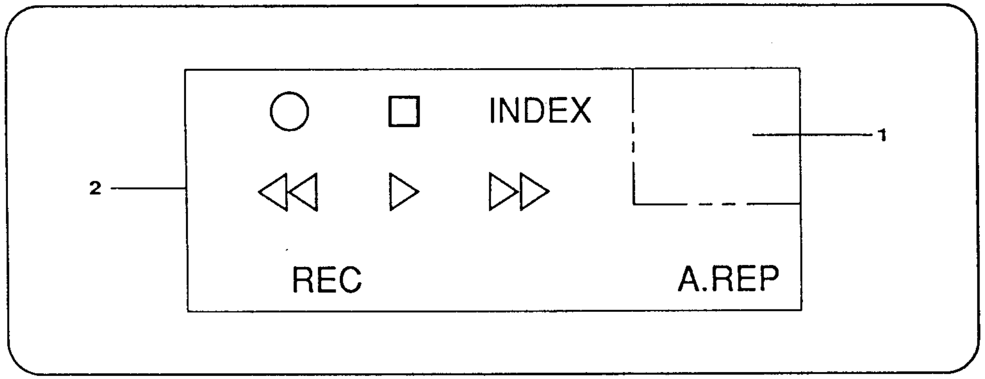
CAUTION :

After providing DC power source (12V), if DC power source level of a DC battery or battery drops, noise bar may be flowed in FF/REW picture search mode.

NOTE :

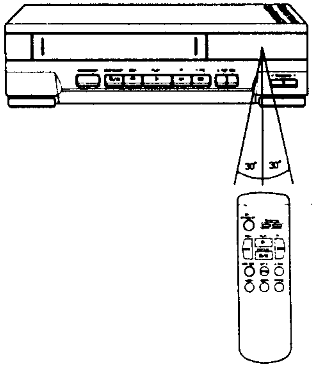
When the unit is not used for a long time, turn off ON/STANDBY button for standby and pull out AC power plug.

1-3-3. INDICATOR



1 INFRARED REMOTE SENSOR

Receives from infrared remote control.



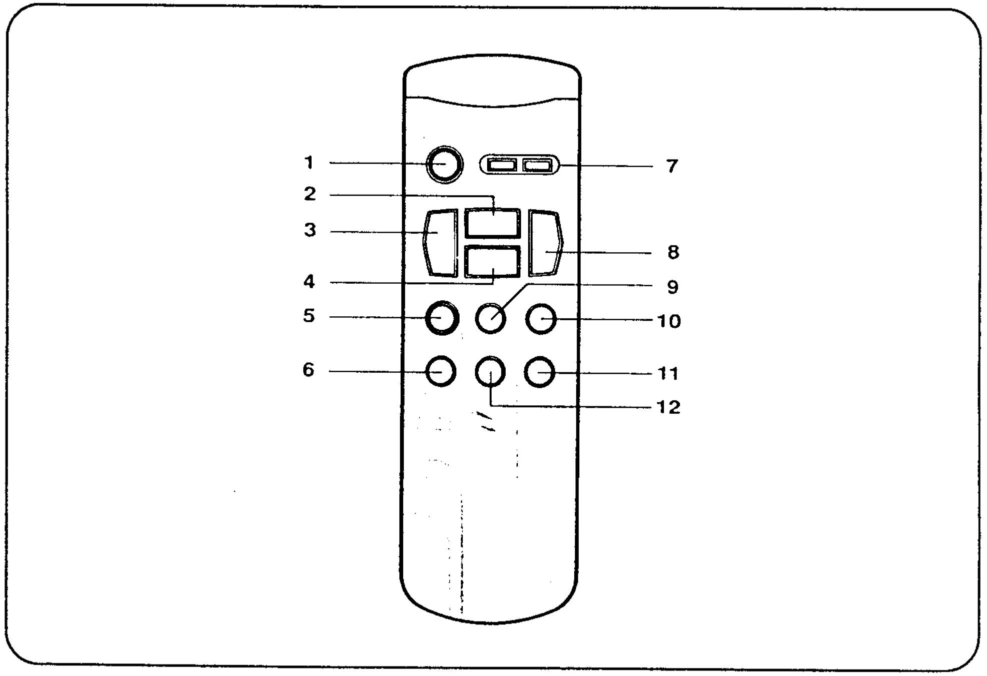
- **REFERENCE :** The state of ON/STANDBY in each power input conditions.

LED \ MODE	UNPLUGED	STANDBY	POWER ON
THE STATE OF ON/STANDBY LED	OFF	DIM RED	BRIGHT RED

2 TAPE MODE INDICATOR

INDICATOR	MODE
□	STOP
▷	PLAYBACK
▷▷	FAST FORWARD
◁◁	REWIND
▷ ▷▷	FORWARD PICTURE SEARCH
◁◁ ▷	REVERSE PICTURE SEARCH
–▷–	AUTO TRACKING
A. REP	AUTO REPEAT
INDEX	INDEX SEARCH
– INDEX –	INDEX MARK/ERASE
REC	RECORD
– REC –	RECORD PAUSE
O	STILL/ POWER ON

1-3-4. REMOTE CONTROL



1 ON/STANDBY BUTTON

2 PLAY BUTTTON

3 REW BUTTON

4 STOP/EJECT BUTTON

5 LINE REC BUTTON
(ONLY FOR LINE RECORDING MODELS)

6 INDEX BUTTON

7 TRACKING V ∧ BUTTON

8 FF BUTTON

9 P/S BUTTON

10 A.TRK BUTTON

11 ERASE BUTTON

12 MARK BUTTON

1-4. REPLACEMENT PROCEDURE FOR LEADLESS (CHIP) COMPONENT

⁎ The following procedures are recommended for the replacement of the leadless components used in this unit.

1. Preparation for replacement

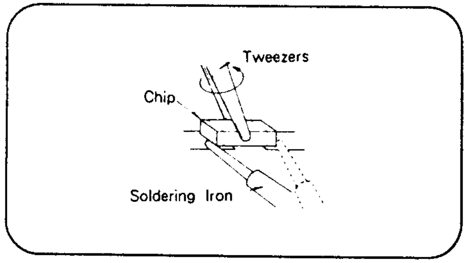
a. Soldering Iron
   Use a pencil-type soldering iron that uses less than 30 watts.
b. Solder
   Eutectic solder (Tin 63%, Lead 37%) is recommended.
c. Soldering time
   Do not apply heat more than 4 seconds.
d. Preheating
   Leadless capacitor must be preheated before installation. (130° C~150° C, for about two minutes).

Note :
a. Leadless component must not be reused after removal.
b. Excessive mechanical stress and rubbing of the component electrode must be avoided.

2. Removing the leadless component (Resistors, Capacitors)

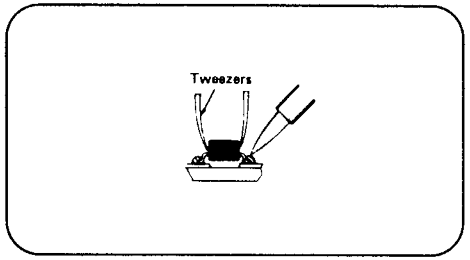
Grasp the leadless component body with tweezers and alternately apply heat to both electrodes. When the solder on both electrodes is melted, remove leadless component with a twisting motion.

Note :
a. Do not attempt to lift the component off the board until the component is completely disconnected from the board by a twising action.
b. Take care not to break the copper foil on printed board.

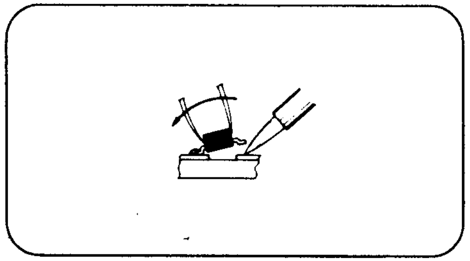


3. Removing the chip component (Transistors, Diodes)

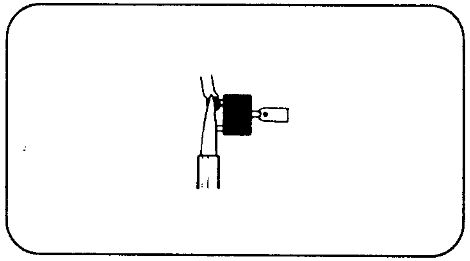
1) Melt the solder of one lead.



2) Lift the side of that lead upward.

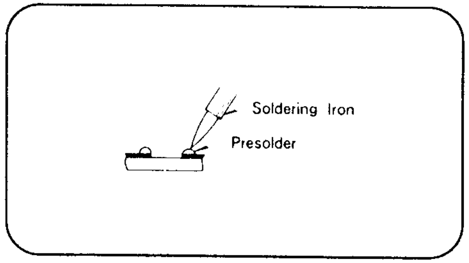


3) Simultaneously heat solder of the two remaining leads and lift part to remove.



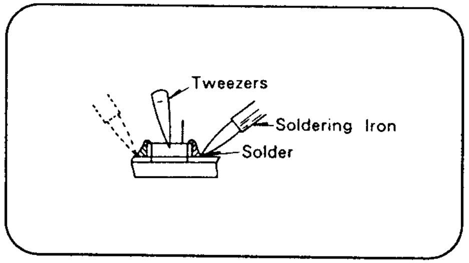
4. Installing the Leadless (chip) Component

1) Presolder the contact points of the circuit board.



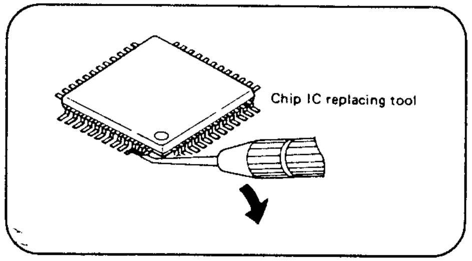
2) Press the part downward with tweezers and solder both electrodes as shown below.

Note :
Do not glue the replacement leadless component to the circuit board.



5. Removing of Flate ICs
(Recommendable manner)

1) For removing solder chips from IC's pins, use a solder remover or a wiry solder absorber.
2) Heat the IC's tips evenly by moving the chip IC replacing tool around them, and detach the IC's leads with a tool in the way of using a lever.
3) Do not reuse ICs removed once (Discard them).



1-5. HOW TO REPLACE LEADLESS (CHIP) COMPONENT

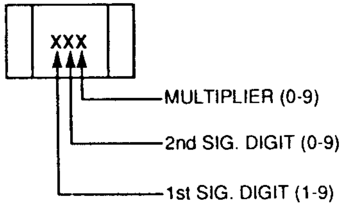
1. Check the followings before S.M.D Troubleshooting

- * Cracked or Chipped Component Body
- * Cracked or Separated Solder Joints
- * Peeling end Terminations or Fractured Leads
- * Rejection of Solder from Copper Pads or Component
- * Foreign Matter on Copper Pads
- * Solder Bridges

2. S.M.D (Surface Mounted Devices) Identification

1) Chip Resistor Identification

※ Standard Chip Resistor Code


XXX
MULTIPLIER (0-9)
2nd SIG. DIGIT (0-9)
1st SIG. DIGIT (1-9)

Examples

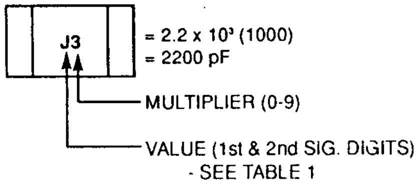
123 = 12 x 10^3(1000) = 12000 Ω
= 12K Ω

470 = 47 x 10^0 (1) = 47 Ω

000 = CHIP JUMPER = 0 Ω

2) Chip Capacitor Identification

※ Standard Two Place Code


J3
MULTIPLIER (0-9)
VALUE (1st & 2nd SIG. DIGITS)
- SEE TABLE 1

= 2.2 x 10^3 (1000)
= 2200 pF

Examples

S2 = 4.7 x 100 = 470 pF

b0 = 3.5 x 1.0 = 3.5 pF

VALUE (33 VALUE SYMBOLS) - UPPER AND LOWER CASE LETTERS					MULTIPLIER
A — 1.0	H — 2.0	b — 3.5	f — 5.0	X — 7.5	0 = x 1.0
B — 1.1	J — 2.2	p — 3.6	T — 5.1	t — 8.0	1 = x 10
C — 1.2	K — 2.4	Q — 3.9	U — 5.6	Y — 8.2	2 = x 100
D — 1.3	a — 2.5	d — 4.0	m — 6.0	y — 9.0	3 = x 1000
E — 1.5	L — 2.7	R — 4.3	V — 6.2	Z — 9.1	4 = x 10000
F — 1.6	M — 3.0	e — 4.5	W — 6.8		5 = x 100000 etc.
G — 1.8	N — 3.3	S — 4.7	n — 7.0		

----- TABLE 1 -----

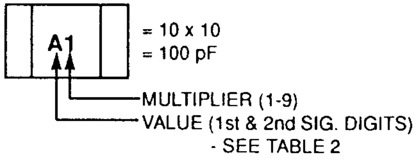
※ Alternate Two Place Code

- Values below 100 pF - Value Read Directly

05 = 5 pF

82 = 82 pF

- Values 100 pF and above - Letter / Number Code


A1
MULTIPLIER (1-9)
VALUE (1st & 2nd SIG. DIGITS)
- SEE TABLE 2

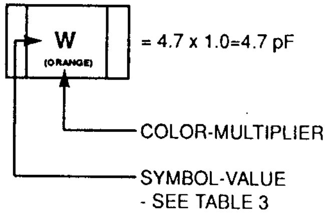
= 10 x 10
= 100 pF

N3 = 33 x 1000
= 33000 pF
= 0.33 uF

VALUE (24 VALUE SYMBOLS) - UPPERCASE LETTERS ONLY					MULTIPLIER
A — 10	F — 16	L — 27	R — 43	W — 68	1 = x 10
B — 11	G — 18	M — 30	S — 47	X — 75	2 = x 100
C — 12	H — 20	N — 33	T — 51	Y — 82	3 = x 1000
D — 13	J — 22	P — 36	U — 56	Z — 91	4 = x 10000
E — 15	K — 24	Q — 39	V — 62		5 = x 100000 etc.

----- TABLE 2 -----

※ Standard Single Place Code


W
(ORANGE)
COLOR-MULTIPLIER
SYMBOL-VALUE
- SEE TABLE 3

= 4.7 x 1.0=4.7 pF

Examples

R (Green) = 3.3 x 100 = 330 pF

7 (Blue) = 8.2 x 1000 = 8200 pF

VALUE (33 VALUE SYMBOLS) - UPPER AND LOWER CASE LETTERS					MULTIPLIER
A — 1.0	H — 1.6	N — 2.7	V — 4.3	3 — 6.8	ORANGE = x 1.0
B — 1.1	I — 1.8	O — 3.0	W — 4.7	4 — 7.5	BLACK = x 10
C — 1.2	J — 2.0	R — 3.3	X — 5.1	7 — 8.2	GREEN = x 100
D — 1.3	K — 2.2	S — 3.6	Y — 5.6	9 — 9.1	BLUE = x 1000
E — 1.5	L — 2.4	T — 3.9	Z — 6.2		VIOLET = x 10000
					RED = x 100000

----- TABLE 3 -----

1-6. CLEANING AND LUBRICATION

1-6-1. CLEANING TAPE MECHANISM

Periodic cleaning is necessary to insure continued excellent performance of the tape mechanism. To clean the following parts, patch and solvent are available.

1. Capstan shaft.
2. All tape guide posts.
3. Clitch pulley.
4. Pinch roller.
5. Belt capstan.
6. Capstan motor pulley.

1-6-2. CLEANING OF ROTATING & STATIONARY HEADS

To clean video heads, full erase head, audio/control (A/C) head we recommend to use head cleaning kit and solvent.

> Note : When cleaning video heads, move the cleaning stick in the direction of head rotation. Wiping in a vertical direction may damage the heads.

Press a chamois cloth which has been dipped in cleaning fluid lightly against the rotaing cylinder assembly, then do the cleaning by slowly rotaing upper cylinder ass'y by hand.

> Note : Never try to clean by using the motor to turn it.

1-6-3. LUBRICATION TAPE MECHANISM

The tape transport mechanism is properly lubricated at the factory.
In normal use cycles, and with average environmental conditions, additional lubrication should not be required during the first year of operation.

Depending on the frequency of use and environmental conditions, periodic lubrication may be required.
When relubricating, remove old lubricant first, then sparingly apply new lubricant.(Excessive lubricant may be transferred to other assemblies causing malfunction).

Use grease on the following parts every 1,000 hours of operations. (See exploded view for location)

1. Between base pole assembly (L, R) and main base.
2. Gear escalator.
3. Gear E/J drive.
4. Gear loading L, R.
5. Slide main.
6. Lever tension control.
7. Lever shift.

Oil may be required for the following parts after 1,000 hours of operation.(See exploded view for location)

Main base
1. Arm tension molding.
2. Shaft reel disk L, R molding.
3. Shaft gear relay T, S1, S2, S3 molding.
4. Shaft clutch
5. Shaft gear review.

Other parts which are not listed above do not be required lubrication, except when parts are replaced.
Use appropriate oil or grease as indicated on exploded view.

1-7. ABBREVIATIONS

X2	: Double
4.43MHz	: Color Sub Carrier
ACC	: Automatic Color Circuit
ACK	: Automatic Color Killer
ADD	: Adder
AFC	: Automatic Frequency Control
AFT	: Automatic Fine Tuning
AGC	: Automatic Gain Control
ALC	: Automatic Level Control
AMP	: Amplifier
APC	: Automatic Phase Control
AUX	: Auxiliary
BATT	: Battery
BD	: Burst Deemphasis
BE	: Burst Emphasis
BH	: Power Supply for Selecting VHF High Band
BL	: Power Supply for Selecting VHF Low Band
BPF	: Band Pass Filter
C.FG	: Capstan Frequency Generator
C.SYNC	: Composite Sync
CAFC	: Capstan Auto Frequency Control
CAPC	: Capstan Auto Phase Control
CATV	: Cable TV
CAR	: Carrier
CAP	: Capstan
CCD	: Charge Coupled Device
CH	: Channel
CHAR.	: Character
CHROMA	: Chrominance
CM	: Capstan Motor
COMP	: Comparator
CST	: Cassette
C-ERR	: Capstan Error
CTL	: Control
C.PG	: Capstan Pulse Generator
CUR.EMPH	: Current Emphasis
D.FG	: Drum Frequency Generator
D.O.C	: Drop Out Compensator
D.PG	: Drum Pulse Generator
D/A	: Digital-to-Analog
D/C	: Dark/Clip
D.AFC	: Drum Auto Frequency Control
D.APC	: Drum Auto Phase Control

DE-EMPH	: De-Emphasis
DET	: Detector
DEV	: Deviation
DLYD	: Delayed
DM	: Drum Motor
DEMOD	: Demodulator
D.D	: Direct Drive
E-E	: Electronic-to Electronic
EMPH	: Emphasis
ENV	: Envelope
EQ	: Equalizer
EPS	: Easy Programming System
F.ADV	: Frame Advance
F-V	: Frequency to Voltage Converter
F.FWD	: Fast Forward
FH	: Frequency Horizontal
FG	: Frequency Generator
FM	: Frequency Modulator
FSC	: Frequency Sub Carrier
FWD	: Forward
FC	: Frequency Center
FL	: Frequency Low
GEN	: Generator
GND	: Ground
HPF	: High Pass Filter
IF	: Intermediate Frequency
IR	: Infrared Receiver
LED	: Light Emitting Diode
LIM	: Limiter
LPF	: Low Pass Filter
LUMA	: Luminance
LCD	: Liquid Crystal Display
LNR	: Linear
MIX	: Mixer
MM	: Monostable Multivibrator
MTS	: Multi Channel TV Sound
MEM	: Memory
MFT	: Manual Fine Tuning
N.C	: No Connection

OSC : Oscillator
OTR : One Touch Recording
OSP : On Screen Programme
OSD : On Screen Display

PB : Play Back
P.C : Power Control
PG : Pulse Generator
PIF : Picture Intermediate Frequency
PLL : Phase Lock Loop
PRG : Programme
PWM : Pulse Width Modulation
PWR : Power
P/S : Pause/Still
PD : Power Detector

REG : Regulator
REC : Record
REC.SAF : Record Safety
REW : Rewind
RF : Radio Frequency
REV : Reverse
RECT : Rectifier
REF : Reference

SC : Simul-Cast
SC : Sub-Carrier
SCK : Shift Clock
SDA : Serial Data
SIF : Sound Intermediate Frequency
S.M.D : Surface Mounted Devices
S.M.P.S : Switching Mode Power Supply
SP : Standard Play
SW25Hz : Head Switching Pulse
SYNC : Synchronizing Signal
SYSCON : System Control
STB : Strobe
SI : Serial Input
SO : Serial Output
SW : Switch

TP : Test Point
TRK : Tracking

UL : Unloading

VT : Voltage Tuning
VLP : Vertical Lock Pulse
V-REF : Voltage Reference
V-SYNC : Vertical Sync
VCO : Voltage Controlled Oscillator
VCR : Video Cassette Recorder
VIF : Video Intermediate Frequency
VPS : Video Programming System
VHS : Video Home System
VXO : Voltage Controlled Crystal Oscillator
VSS : Voltage Super Source
VISS : VHS Index Search System

W/C : White /Clip
W/D : White/Dark

Y/C : Luminance/Chrominance

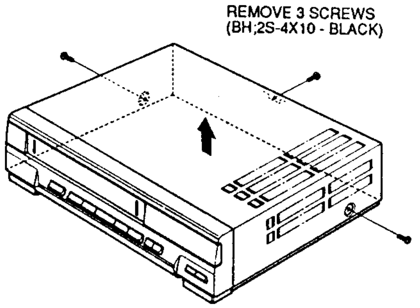
uP : Microprocessor

2. DISASSEMBLY

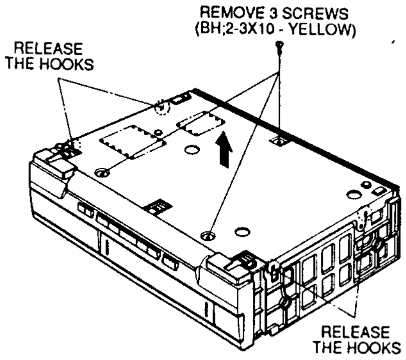
2-1. INSTRUMENT DISASSEMBLY

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the illustrations. Reassemble in reverse order.

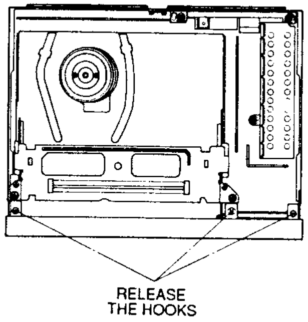
2-1-1. Top Cabinet Removal



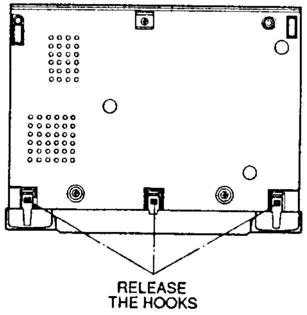
2-1-2. Bottom Cover Removal



2-1-3. Front Panel Removal



(Top View)



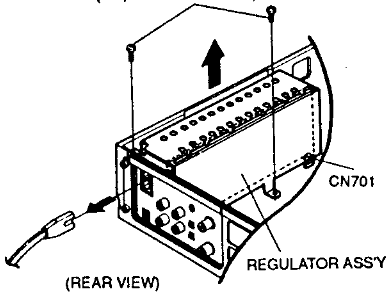
(Bottom View)

2-2. CIRCUIT BOARD DISASSEMBLY

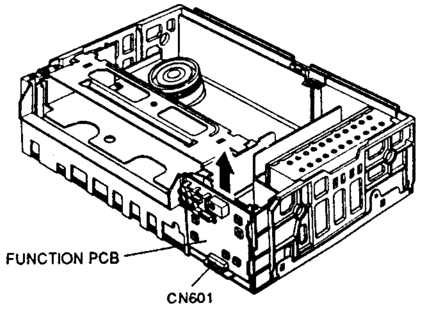
Note :
1. When removing chassis unit assembly, take extreme care not to damage the Main PCB front.
2. When reinstalling Deck on the Main PCB, take extreme care not to damage sensor.

2-2-1. Regulator Ass'y Removal

REMOVE 2 SCREWS (BH;2-3X12 - YELLOW)


CN701
REGULATOR ASS'Y
(REAR VIEW)

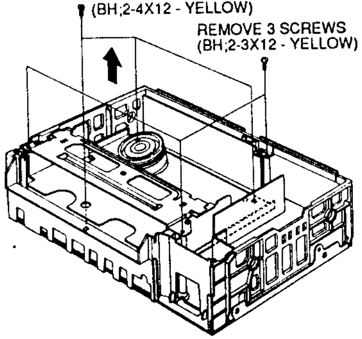
2-2-2. Function Circuit Board Removal


FUNCTION PCB
CN601

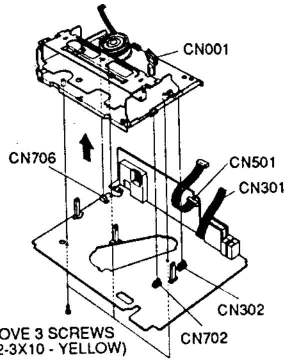
2-2-3. Chassis Unit Removal

REMOVE 3 SCREWS (BH;2-4X12 - YELLOW)

REMOVE 3 SCREWS (BH;2-3X12 - YELLOW)

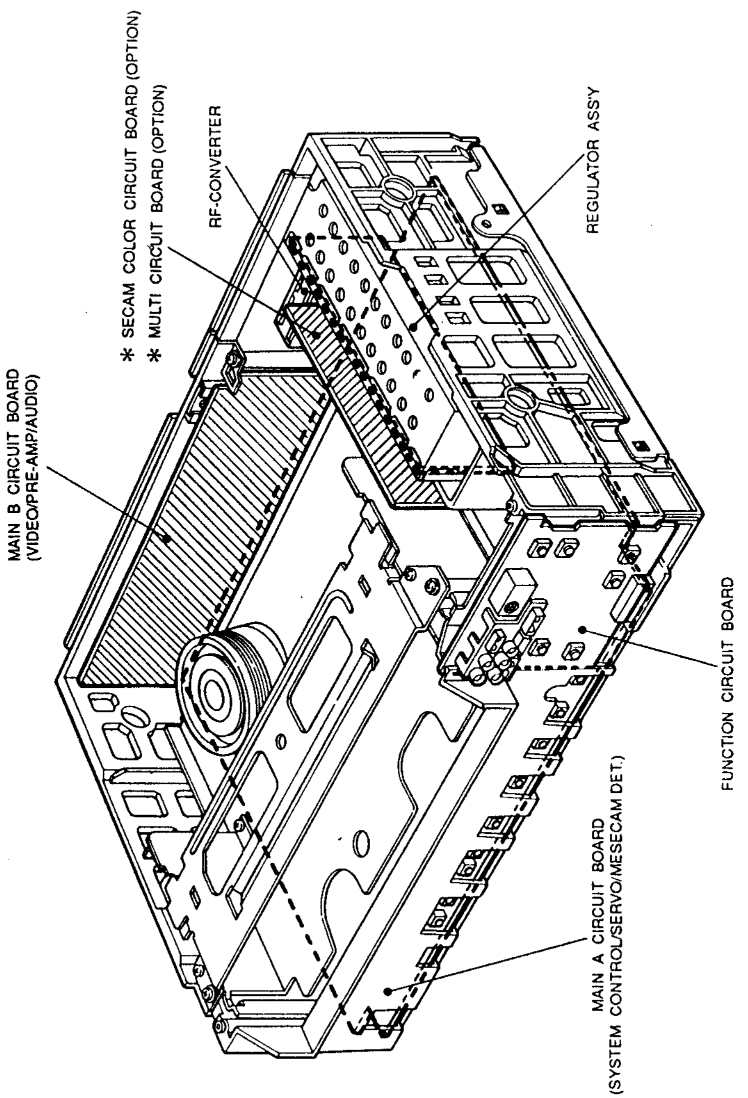


2-2-4. Main Circuit Board Removal


CN001
CN706
CN501
CN301
CN302
CN702

REMOVE 3 SCREWS (BH;2-3X10 - YELLOW)

* Circuit Boards Location


* SECAM COLOR CIRCUIT BOARD (OPTION)
* MULTI CIRCUIT BOARD (OPTION)
RF-CONVERTER
REGULATOR ASS'Y
MAIN B CIRCUIT BOARD (VIDEO/PRE-AMP/AUDIO)
FUNCTION CIRCUIT BOARD
MAIN A CIRCUIT BOARD (SYSTEM CONTROL/SERVO/MESECAM DET.)

2-3. TAPE TRANSPORT MECHANISM IDENTIFICATION

2-3-1. Top View

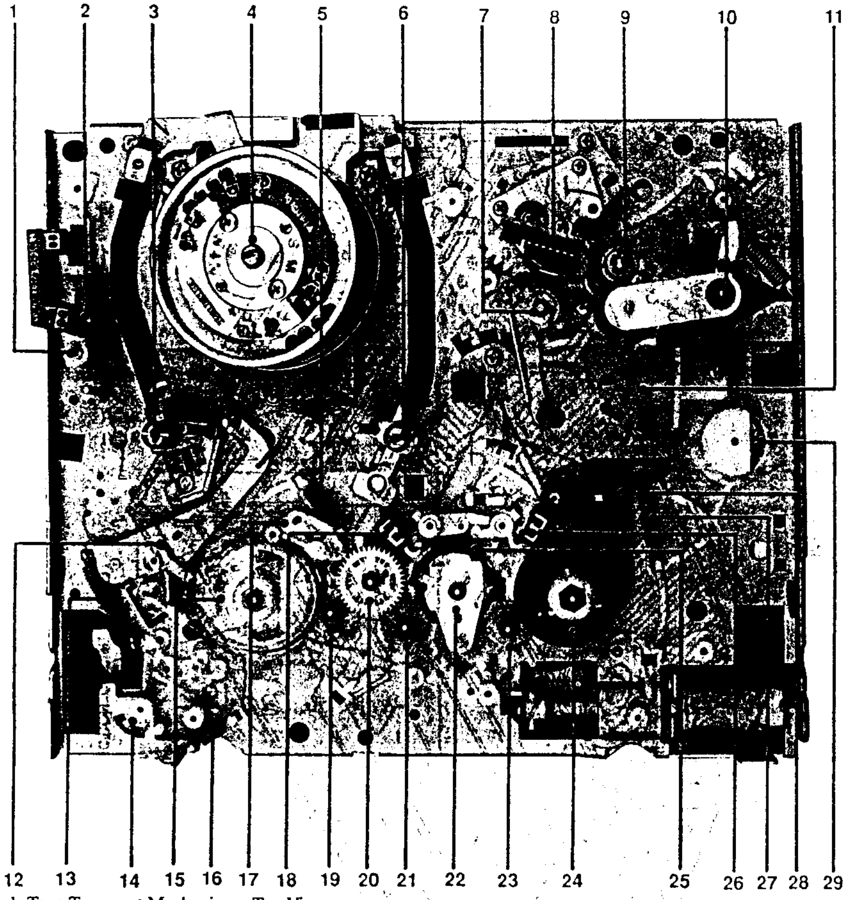


Fig. 1 Tape Transport Mechanism - Top View

1. SUPPLY ROLLER
2. F/E HEAD ASS'Y
3. P.B & G.R (L)
4. CYLINDER ASS'Y
5. S/P BRAKE SUB "L"
6. P.B & G.R (R)
7. REVIEW ARM ASS'Y
8. A/C HEAD ASS'Y
9. CAPSTAN SHAFT
10. PINCH ROLLER UNIT
11. UNIT DRIVE PINCH
12. ARM TENSION ASS'Y
13. SPRING TENSION
14. LEVER REC S/W
15. REEL DISK "L"
16. S/P RECORD S/W
17. BRAKE SUB "L"
18. BRAKE MAIN "L" ASS'Y
19. GEAR RELAY S3
20. GEAR RELAY S2
21. GEAR RELAY S1
22. IDLER SUB ASS'Y
23. GEAR RELAY "T"
24. REEL DISK "R"
25. S/P BRAKE MAIN
26. BRAKE MAIN "R" ASS'Y
27. S/P BRAKE SUB "R"
28. BRAKE SUB "R" ASS'Y
29. GEAR EJECT DRIVE

2-3-2. Bottom View

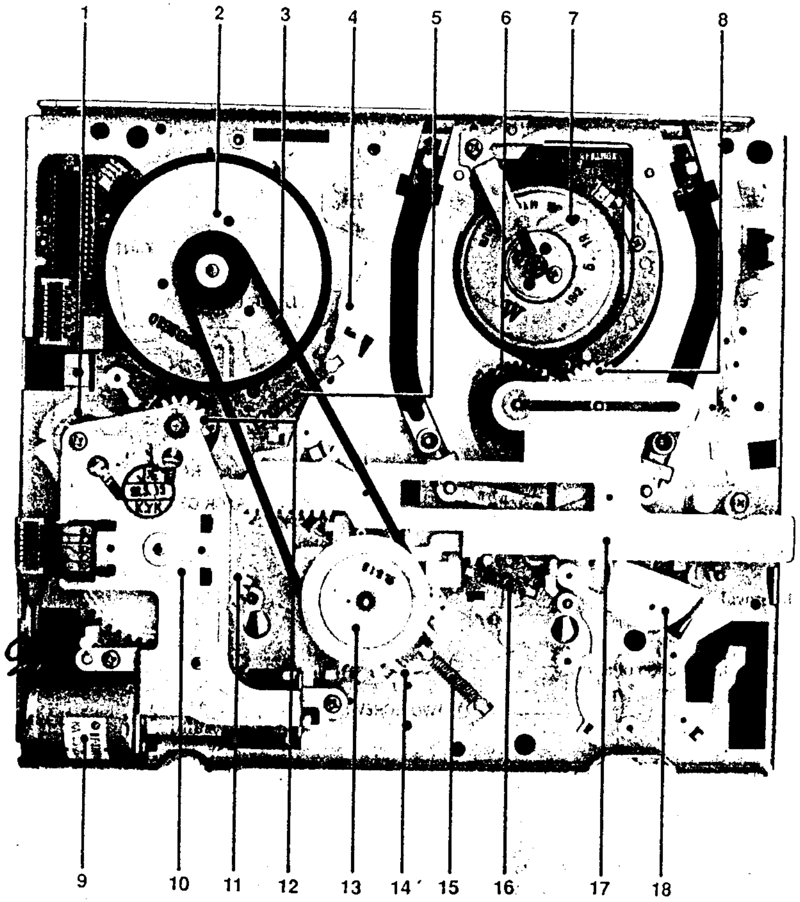


Fig. 2 Tape Transport Mechanism - Bottom View

1. GEAR EJECT DRIVE
2. MOTOR D/D CAPSTAN
3. BELT CAPSTAN
4. BRAKE D/D CAPSTAN
5. S/P BRAKE CAPSTAN
6. GEAR LOADING "R"
7. CYLINDER MOTOR
8. GEAR LOADING "L"
9. MOTOR LOADING
10. LOADING UNIT ASS'Y
11. GEAR MASTER
12. GEAR RELAY PINCH
13. CLUTCH ASS'Y
14. LEVER SHIFT
15. S/P BRAKE SUB "R"
16. S/P RELEASE BRAKE
17. SLIDE MAIN
18. LEVER TENSION CONTROL

2-4. HOUSING ASS'Y REMOVAL & REASSEMBLY

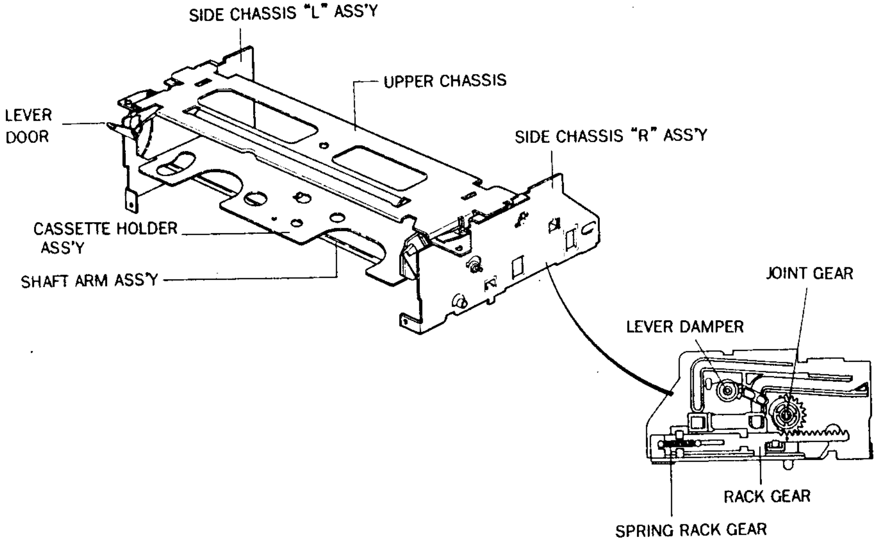

SIDE CHASSIS "L" ASS'Y
UPPER CHASSIS
LEVER DOOR
SIDE CHASSIS "R" ASS'Y
CASSETTE HOLDER ASS'Y
SHAFT ARM ASS'Y
JOINT GEAR
LEVER DAMPER
RACK GEAR
SPRING RACK GEAR

Fig. 3 Housing Ass'y Identification

2-4-1. Housing Ass'y Removal

1. Remove four (4) screws ①, ②.
2. Lift up the housing ass'y in the direction of arrow.

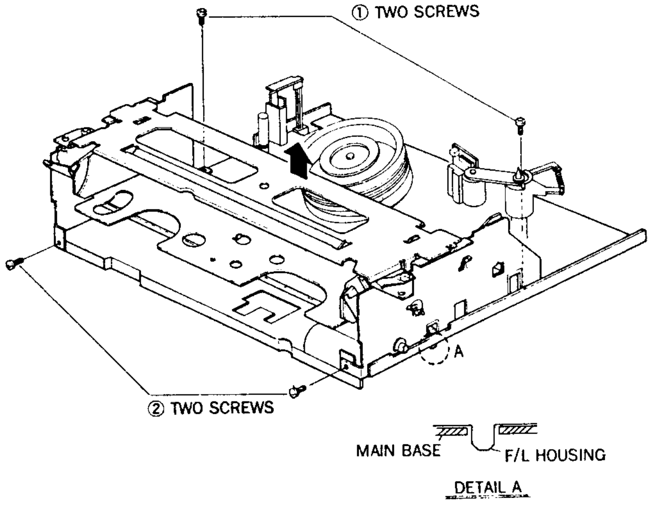

① TWO SCREWS
② TWO SCREWS
A
MAIN BASE
F/L HOUSING
DETAIL A

Fig. 4 Housing Ass'y Removal

2-4-2. Cassette Holder Ass'y & Side Chassis "L", "R" Removal

1. Remove two (2) screws ①.
2. Lift up the upper chassis ② and the cassette holder ass'y ③ in the direction of arrow (A).
3. Remove the side chassis "L", "R" ④, ⑤ from the shaft arm ass'y in the direction of arrows (B).

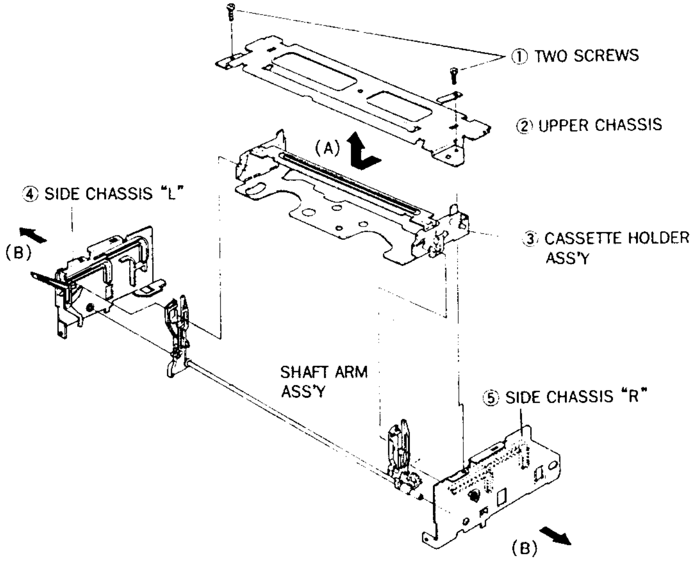

① TWO SCREWS
② UPPER CHASSIS
(A)
④ SIDE CHASSIS "L"
(B)
③ CASSETTE HOLDER ASS'Y
SHAFT ARM ASS'Y
⑤ SIDE CHASSIS "R"
(B)

Fig. 5 Cassette Holder Ass'y & Side Chassis "L", "R" Removal

2-4-3. Joint Gear & Rack Gear Removal

1. Pull the rack gear ① in the direction of arrow (A) to the end.
2. Remove one screw ② and then the joint gear ③.
3. Remove the rack gear ① toward arrow (B).

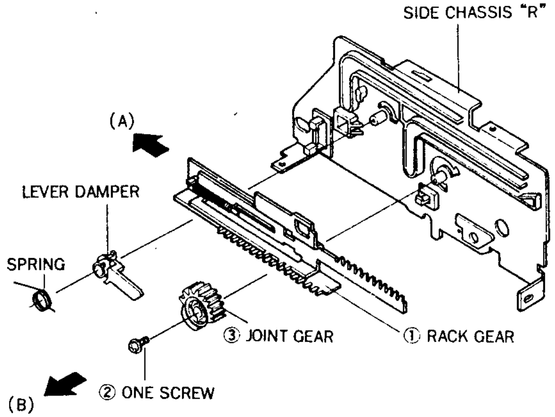

SIDE CHASSIS "R"
(A)
LEVER DAMPER
SPRING
③ JOINT GEAR
① RACK GEAR
② ONE SCREW
(B)

Fig. 6 Joint Gear & Rack Gear Removal

2-4-4. Reinstallation of Rack Gear and Joint Gear

Reinstallation and Timing of Rack Gear and Joint Gear

1. Assemble the rack gear ① to the side chassis "R".
2. Pull the rack gear ① in the direction of arrow to the end.
3. Install the joint gear so that the slot #1 of joint gear ② is aligned with the tooth #1 of rack gear ①.

Note : When timing is correct the key-way will fit into the notch automatically.

4. Tighten one (1) screw with the joint gear.

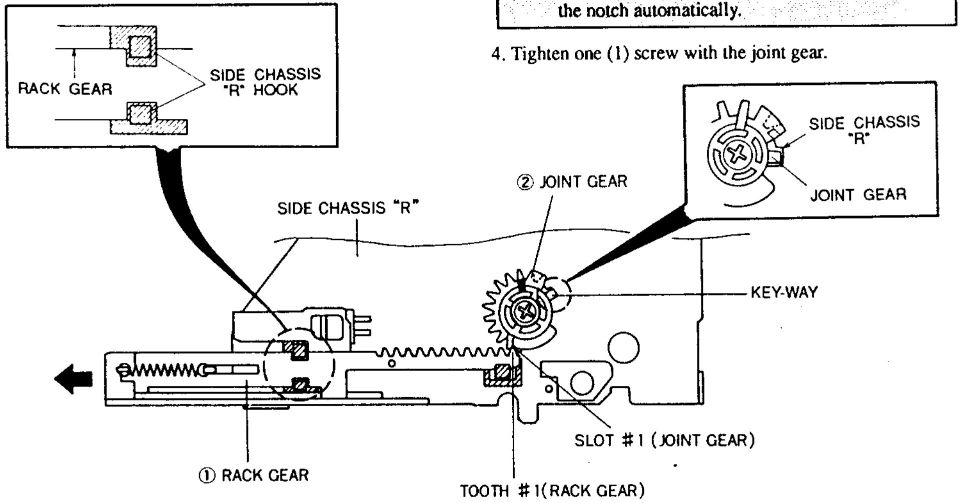

RACK GEAR
SIDE CHASSIS "R" HOOK
SIDE CHASSIS "R"
JOINT GEAR
② JOINT GEAR
SIDE CHASSIS "R"
KEY-WAY
SLOT #1 (JOINT GEAR)
① RACK GEAR
TOOTH #1(RACK GEAR)

Fig. 7 Reinstallation and Timing of Rack Gear and Joint Gear

Timing Confirmation of Rack Gear and Joint Gear (Eject mode)

1. Push the rack gear ① in the direction of arrow to the end.
2. Make sure that the tooth #12 of joint gear ② and the Timing Point of rack gear ① are aligned correctly as shown in Fig. 8.

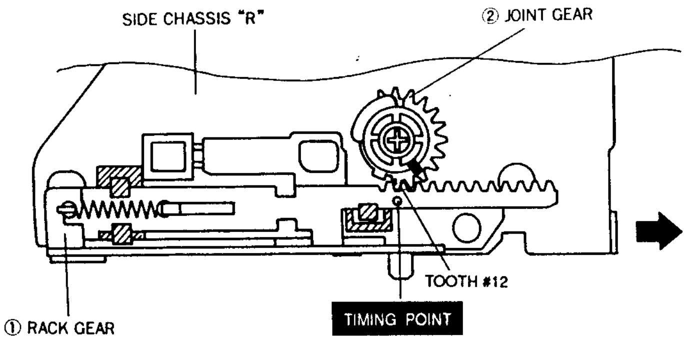

SIDE CHASSIS "R"
② JOINT GEAR
TOOTH #12
① RACK GEAR
TIMING POINT

Fig. 8 Timing Confirmation of Rack Gear and Joint Gear

2-4-5. Reassembly of Housing Ass'y

1. After pushing the rack gear in direction of arrow to the end, insert the pin of the arm gear into the hole of side chassis "R".
2. Align the slot #1 (arrow mark) of the arm gear ① with the tooth #3 of the joint gear ②. (Refer to timing in Fig. 9)
3. Install the side chassis "L" so that the shaft arm pin goes into the hole in the side chassis "L".
4. Turn the shaft arm to up-position and drop the cassette holder into the arm grooves.
5. Install the upper chassis and secure with two (2) screws.

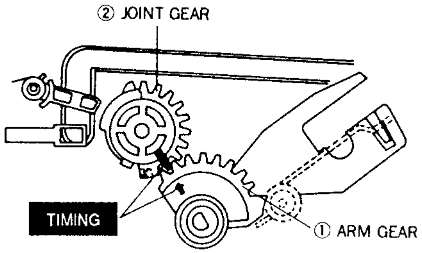
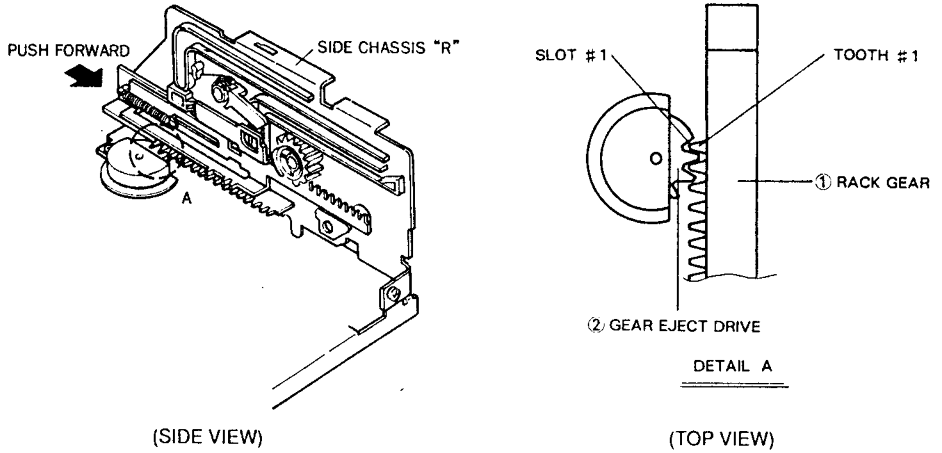

② JOINT GEAR
TIMING
① ARM GEAR

Fig. 9 Reassembly Joint Gear & Arm Gear

2-4-6. Reinstallation of Housing Ass'y & Deck Ass'y

Note : Make sure deck is in the eject position.

1. Assemble the housing ass'y while pushing the rack gear forward to align the slot #1 of gear eject drive ② and the tooth #1 of rack gear ①. (Refer to Detail A)
2. Install the housing ass'y and then tighten four (4) screws (See Fig. 4)


PUSH FORWARD
SIDE CHASSIS "R"
A
SLOT #1
TOOTH #1
① RACK GEAR
② GEAR EJECT DRIVE
DETAIL A

(SIDE VIEW)

(TOP VIEW)

Fig. 10 Reinstallation of Housing Ass'y

2-5. CYLINDER ASS'Y REMOVAL & REASSEMBLY

2-5-1. Cylinder Ass'y Removal from Main Base

1. Release the F.P.C cable ① from Main B PCB (CN801) and disconnect the lead connector ass'y ② from the cylinder PCB.
2. Remove three (3) screws ③ securing the base cylinder and the main base.
3. Lift the cylinder ass'y ④ in the direction of arrow.

CAUTION : Take extreme care when removing the cylinder ass'y. Do not touch the video head tips during servicing.

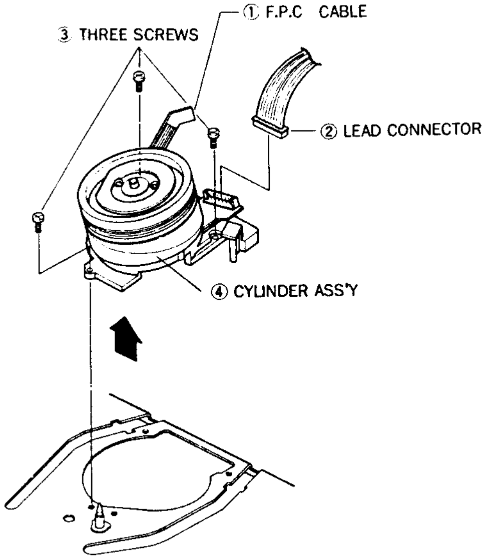

① F.P.C CABLE
③ THREE SCREWS
② LEAD CONNECTOR
④ CYLINDER ASS'Y

Fig. 11 Cylinder Ass'y Removal

2-5-2. Exploded View of Cylinder Ass'y

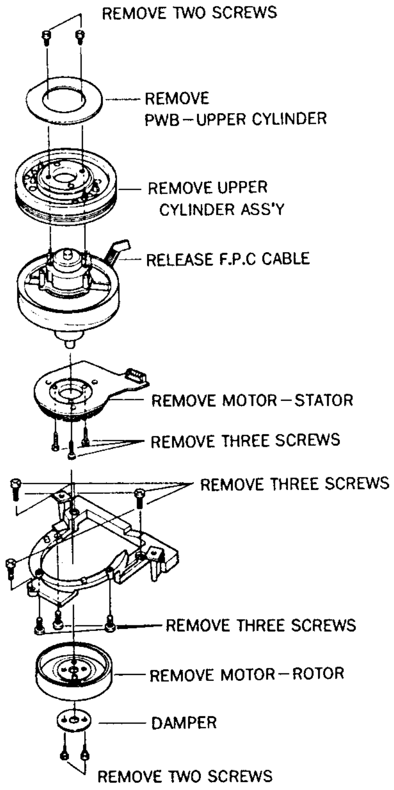

REMOVE TWO SCREWS
REMOVE PWB-UPPER CYLINDER
REMOVE UPPER CYLINDER ASS'Y
RELEASE F.P.C CABLE
REMOVE MOTOR-STATOR
REMOVE THREE SCREWS
REMOVE THREE SCREWS
REMOVE THREE SCREWS
REMOVE MOTOR-ROTOR
DAMPER
REMOVE TWO SCREWS

Fig. 12 Exploded View of Cylinder Ass'y

2-5-3. Upper Cylinder Ass'y Removal

1. Remove two (2) screws ① from the upper cylinder ass'y ③.
2. Unsolder the PWB-Upper cylinder ② from the upper cylinder ass'y ③ and remove the upper cylinder ass'y ③ from the cylinder ass'y. (See Fig. 14)

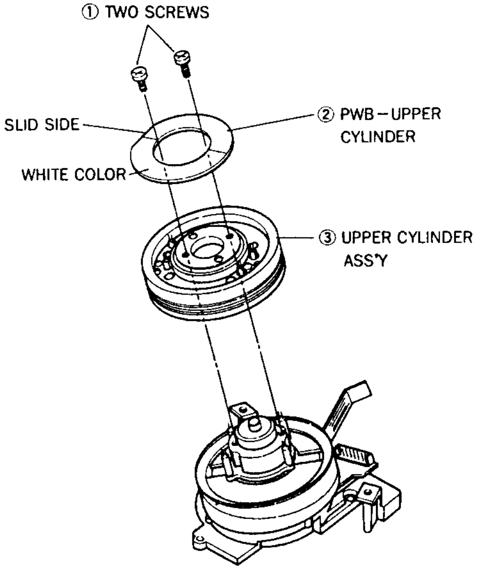

① TWO SCREWS
SLID SIDE
WHITE COLOR
② PWB-UPPER CYLINDER
③ UPPER CYLINDER ASS'Y

Fig. 13 Upper Cylinder Ass'y Removal

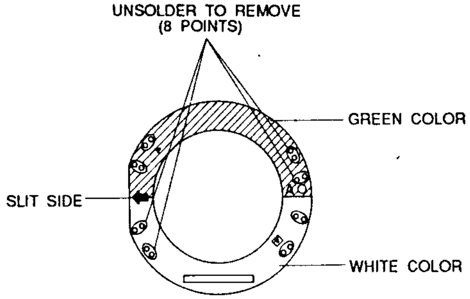

UNSOLDER TO REMOVE
(8 POINTS)
GREEN COLOR
SLIT SIDE
WHITE COLOR

Fig. 14 PWB Upper Cylinder Top View

2-5-4. Lower Cylinder Ass'y Removal

1. Remove three (3) screws ① from the base cylinder ②.
2. Lift up the lower cylinder ass'y ③ from the base cylinder ②.

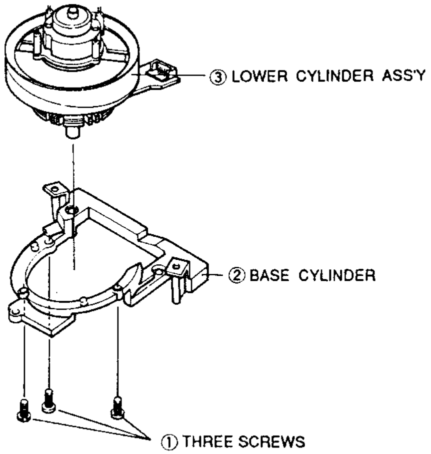

③ LOWER CYLINDER ASS'Y
② BASE CYLINDER
① THREE SCREWS

Fig. 15 Lower Cylinder Ass'y Removal

2-5-5. Cylinder Motor Removal

1. Remove three (3) screws ① from the base cylinder ②.
2. Remove two (2) screws ③ from the damper ④,then remove the damper ④ and the motor-rotor ⑤.
3. Remove three (3) screws ⑥ from the motor-stator ⑦ and take it out.

Note : Mark rotor position to insure correct phase orientation upon reinstallation.

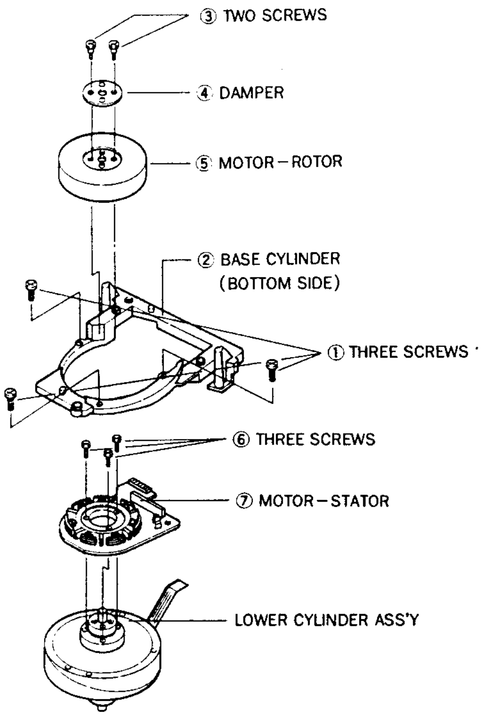

③ TWO SCREWS
④ DAMPER
⑤ MOTOR–ROTOR
② BASE CYLINDER (BOTTOM SIDE)
① THREE SCREWS
⑥ THREE SCREWS
⑦ MOTOR–STATOR
LOWER CYLINDER ASS'Y

Fig. 16 Cylinder Motor Removal

2-5-6. Assembly of Lower Cylinder

1. Tighten three (3) screws with the motor-stator. (Refer to Fig. 16)
2. Reinstall the motor-rotor, damper and secure with two (2) screws. (Refer to Fig. 16)

Note : Make sure that the hole of bush cylinder on lower cylinder and the hole of motor rotor are aligned correctly as shown in Fig. 17.

3. Reinstall the lower cylinder to the base cylinder and secure with three (3) screws.

Note : Align two (2) base cylinder pin before reinstalling.

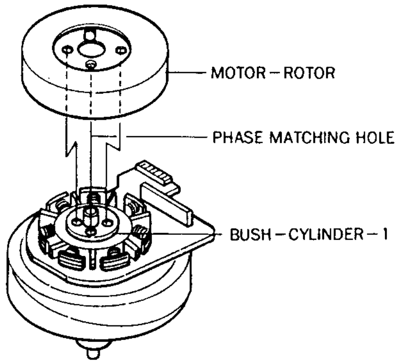

MOTOR–ROTOR
PHASE MATCHING HOLE
BUSH–CYLINDER–1

Fig. 17 Bush Cylinder -1 & Motor Rotor Timing

2-5-7. Assembly of Upper Cylinder

1. When installing the upper cylinder, make sure green color (CH1) goes to CH1 head tip position on lower cylinder.
2. Tighten two (2) screws on the upper cylinder. (Refer to Fig. 13)

Note : Timing of the upper cylinder PCB.

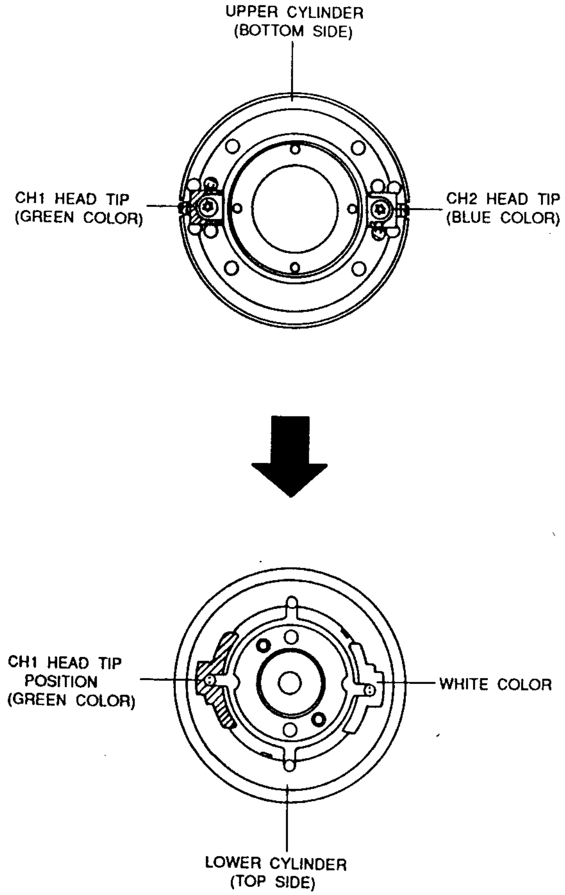

UPPER CYLINDER (BOTTOM SIDE)
CH1 HEAD TIP (GREEN COLOR)
CH2 HEAD TIP (BLUE COLOR)
CH1 HEAD TIP POSITION (GREEN COLOR)
WHITE COLOR
LOWER CYLINDER (TOP SIDE)

Fig. 18 Upper Cylinder Ass'y Timing

2-5-8. Assembly of Cylinder Ass'y

1. Reinstall cylinder ass'y on the main base.
2. Tighten three (3) screws securing the base cylinder and the main base.
3. Reconnect F.P.C cable to the Main B PCB and the lead connector ass'y to the bottom cylinder PCB.

2-6. REEL DISK ASS'Y REMOVAL

2-6-1. Brake Sub "L" Removal

1. Remove the spring brake sub "L" ①.
2. Lift up the brake sub "L" ② while pushing the clip brake sub"L" ③ in the direction of arrow.

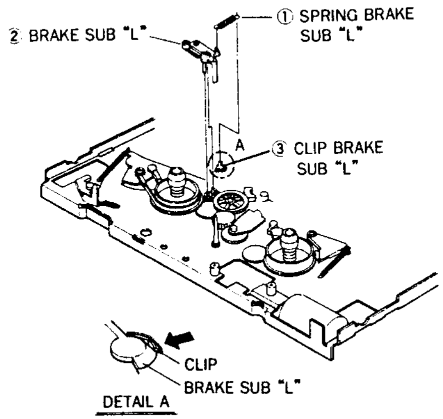

② BRAKE SUB "L"
① SPRING BRAKE SUB "L"
A
③ CLIP BRAKE SUB "L"
CLIP
BRAKE SUB "L"
DETAIL A

Fig. 19 Brake Sub "L" Removal

2-6-2. Gear Relay S2 & S1 Removal

1. Remove the washer slits ①.
2. Lift up the gear relay S2 ② and S1 ③.

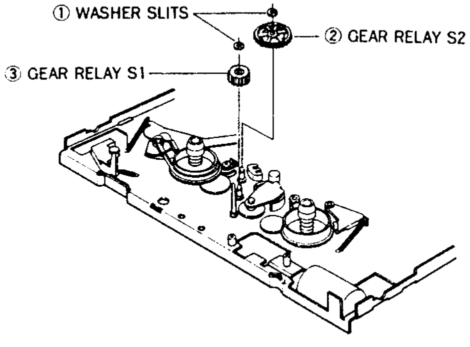

① WASHER SLITS
② GEAR RELAY S2
③ GEAR RELAY S1

Fig. 20 Gear Relay S2 & S1 Removal

2-6-3. Full Arm Tension Ass'y Removal

1. Take off the spring tension ①.
2. Push the pin arm tension ② releasing the clip in the direction of arrow (Bottom View).
3. Lift up the full arm tension ass'y ③.

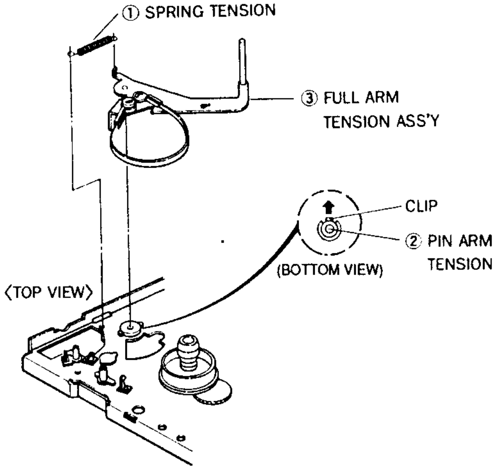

① SPRING TENSION
③ FULL ARM TENSION ASS'Y
CLIP
② PIN ARM TENSION
(BOTTOM VIEW)
⟨TOP VIEW⟩

Fig. 21 Full Arm Tension Ass'y Removal

2-6-4. Reel Disk "L" Ass'y & Gear Relay S3 Removal

1. Remove the washer slit (A) ①.
2. Lift up the reel disk "L" ass'y ② and the washer plain③.
3. Remove the washer slit (B) ④.
4. Lift up the gear relay S3 ⑤.

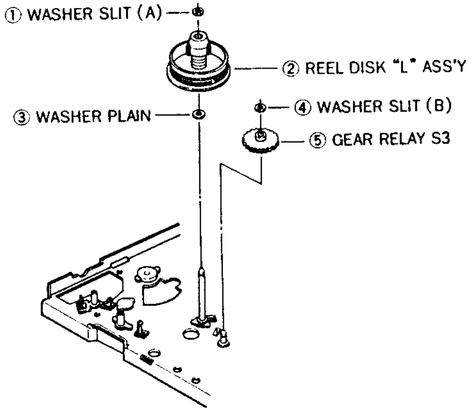

① WASHER SLIT (A)
② REEL DISK "L" ASS'Y
③ WASHER PLAIN
④ WASHER SLIT (B)
⑤ GEAR RELAY S3

Fig. 22 .Reel Disk "L" Ass'y & Gear Relay S3 Removal

2-6-5. Brake Sub "R" Ass'y Removal

1. Remove the spring brake sub "R" ①.
2. Lift up the brake sub "R" ass'y ② while pushing the clip brake sub "R" ③ in the direction of arrow.

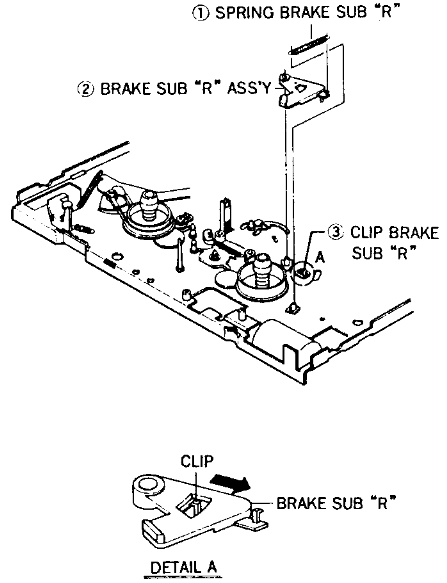

① SPRING BRAKE SUB "R"
② BRAKE SUB "R" ASS'Y
③ CLIP BRAKE SUB "R"
A
CLIP
BRAKE SUB "R"
DETAIL A

Fig. 23 Brake Sub "R" Ass'y Removal

2-6-6. Brake Main "L" & "R" Ass'y Removal (Fig. 24)

1. Remove the spring brake main ①.
2. Lift up the brake main "L" ass'y ② while pushing the clip in the direction of arrow (A). (Detail A)
3. Lift up the brake main "R" ass'y ③ while pushing the clip in the direction of arrow (B). (Detail B)

2-6-7. Reel Disk "R" Ass'y & Gear Relay "T" Removal (Fig. 25)

1. Remove the washer slit (A) ①.
2. Lift up the reel disk "R" ass'y ②.
3. Lift up the washer plain ③.
4. Remove the washer slit (B) ④.
5. Lift up the Gear Relay "T" ⑤.

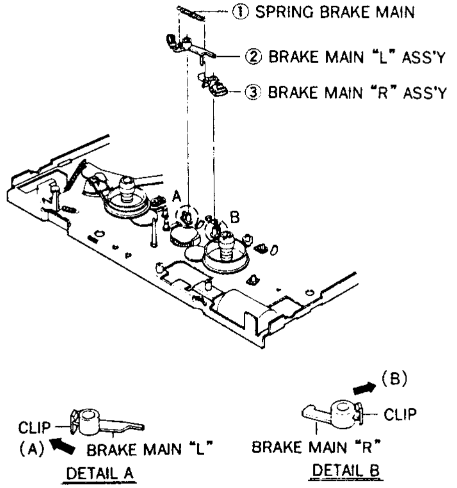

① SPRING BRAKE MAIN
② BRAKE MAIN "L" ASS'Y
③ BRAKE MAIN "R" ASS'Y
A
B
CLIP
(A)
BRAKE MAIN "L"
DETAIL A
(B)
CLIP
BRAKE MAIN "R"
DETAIL B

Fig. 24 Brake Main "L" & "R" Ass'y Removal

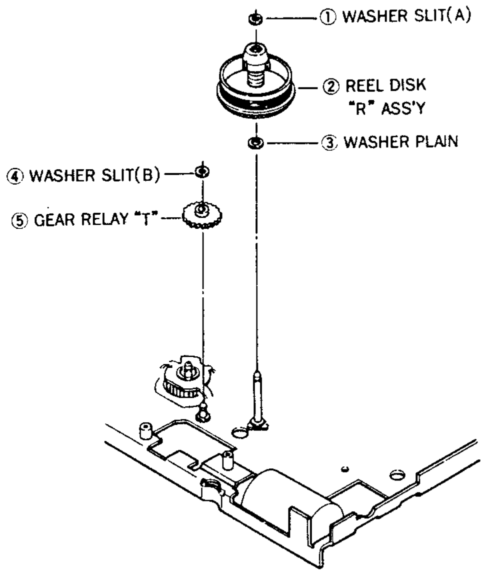

① WASHER SLIT(A)
② REEL DISK "R" ASS'Y
③ WASHER PLAIN
④ WASHER SLIT(B)
⑤ GEAR RELAY "T"

Fig. 25 Reel Disk "R" Ass'y & Gear Relay "T" Removal

2-6-8. Idler Sub Ass'y Removal

1. Remove the washer slit ①.
2. Lift up the idler sub ass'y ②.

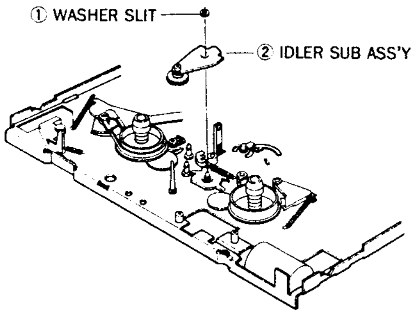

① WASHER SLIT
② IDLER SUB ASS'Y

Fig. 26 Idler Sub Ass'y Removal

2-6-9. Lever REC S/W Removal

1. Remove the spring record S/W ①.
2. Lift up the lever record S/W ② while pushing the clip in the direction of arrow.

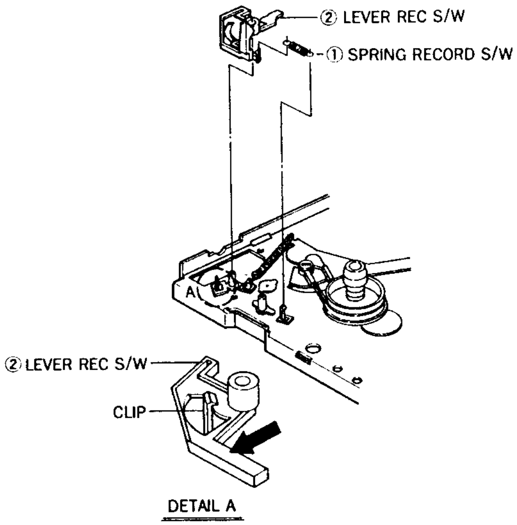

② LEVER REC S/W
① SPRING RECORD S/W
A
② LEVER REC S/W
CLIP
DETAIL A

Fig. 27 Lever REC S/W Removal

2-7. LOADING & CAPSTAN MOTOR ASS'Y REMOVAL & REASSEMBLY

2-7-1. Belt Capstan Removal

1. Remove the belt capstan ①.

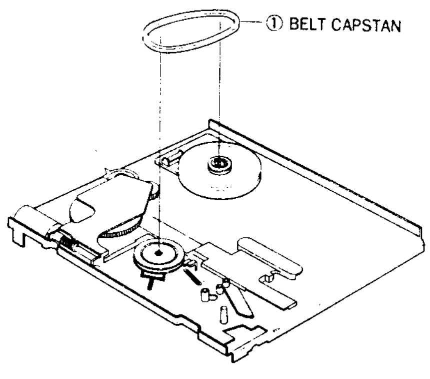

① BELT CAPSTAN

Fig. 28 Belt Capstan Removal

2-7-2. Motor D/D Capstan Removal

1. Remove three (3) screws ①. (Top View)
2. Lift up the motor D/D capstan ②. (Bottom View)

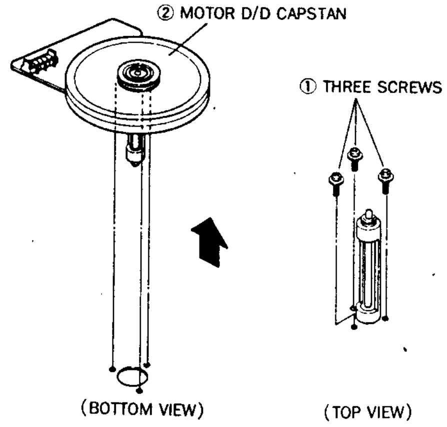

② MOTOR D/D CAPSTAN
① THREE SCREWS
(BOTTOM VIEW)
(TOP VIEW)

Fig. 29 Motor D/D Capstan Removal

2-7-3. Clutch Ass'y Removal

1. Remove the washer slit ①.
2. Lift up the clutch ass'y ②.
3. Remove the washer plain ③.

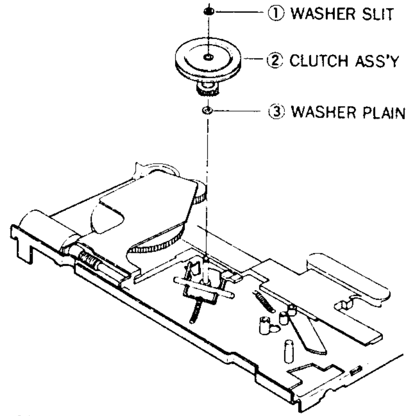

① WASHER SLIT
② CLUTCH ASS'Y
③ WASHER PLAIN

Fig. 30 Clutch Ass'y Removal

2-7-4. L/D Unit Ass'y & Gear Eject Drive Removal

1. Remove three (3) screws ① holding the loading unit ass'y ②.
2. Lift up the loading unit ass'y ②.
3. Lift up the gear eject drive ③.

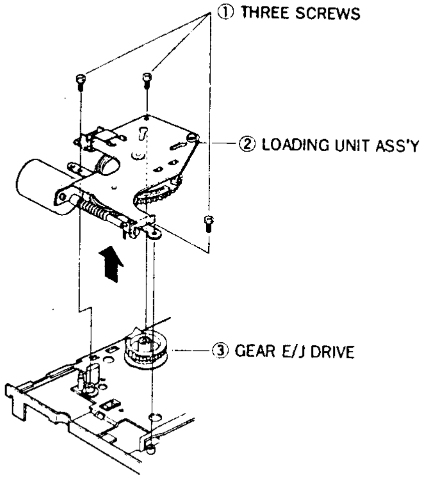

① THREE SCREWS
② LOADING UNIT ASS'Y
③ GEAR E/J DRIVE

Fig. 31 L/D Unit Ass'y & Gear Eject Drive Removal

2-7-5. Slide Main Removal

1. Remove the screw ① and washer plain ② and washer slit ③.
2. Release the clip ④ holding the slide main ⑤ and then lift up the slide main ⑤.

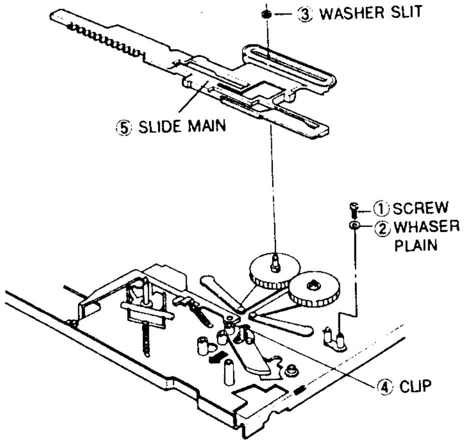

③ WASHER SLIT
⑤ SLIDE MAIN
①SCREW
②WHASER PLAIN
④ CLIP

Fig. 32 Slide Main Removal

2-7-6. Brake D/D Capstan Ass'y Removal

1. Remove the spring brake capstan ①.
2. Turn the brake D/D capstan ass'y ③ clockwise and then lift up it while pushing clip in the direction of arrow.

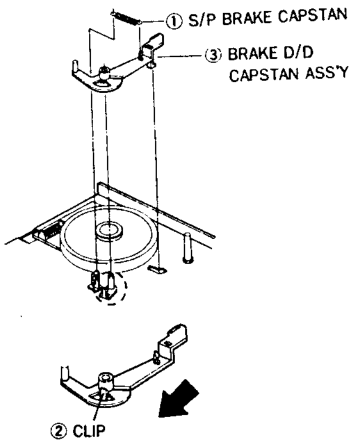
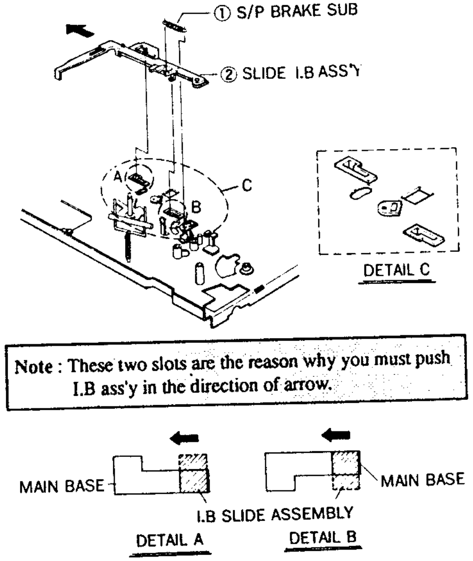

① S/P BRAKE CAPSTAN
③ BRAKE D/D CAPSTAN ASS'Y
② CLIP

Fig. 33 Brake D/D Capstan Ass'y Removal

2-7-7. Slide I.B Ass'y Removal

1. Remove the spring brake sub ①.
2. Lift up the slide I.B ass'y ② while pushing the slide I.B ass'y ② to the end of the slot in the direction of arrow.


① S/P BRAKE SUB
② SLIDE I.B ASS'Y
A
B
C
DETAIL C
MAIN BASE
MAIN BASE
I.B SLIDE ASSEMBLY
DETAIL A
DETAIL B

Note : These two slots are the reason why you must push I.B ass'y in the direction of arrow.

Fig. 34 Slide I.B Ass'y Removal

2-7-8. Lever Shift Removal

1. Remove the spring lever shift ①.
2. Lift up the lever shift ②.

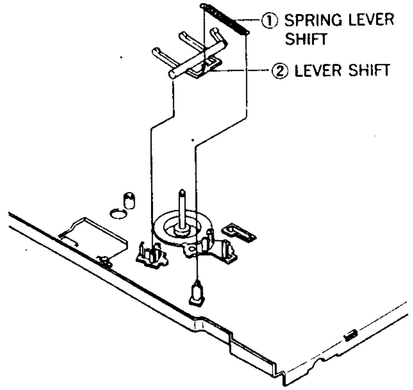

① SPRING LEVER SHIFT
② LEVER SHIFT

Fig. 35 Lever Shift Removal

2-7-9. Lever Tension Control Removal

1. Lift up the lever tension control ①.

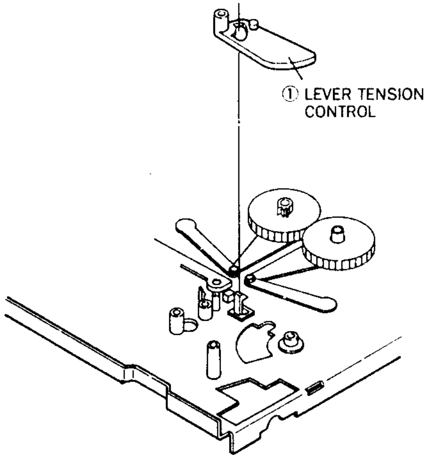

① LEVER TENSION CONTROL

Fig. 36 Lever Tension Control Removal

2-7-10. Gear Loading "L", "R" Ass'y Removal

1. Lift up the gear loading "R" ass'y ①.
2. Lift up the gear loading "L" ass'y ③ while pushing the gear loading "L" clip ② in the direction of arrow.

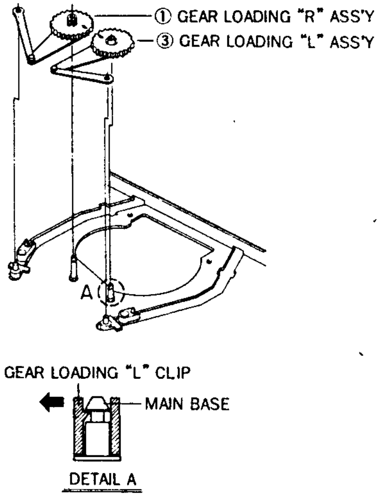

① GEAR LOADING "R" ASS'Y
③ GEAR LOADING "L" ASS'Y
A
② GEAR LOADING "L" CLIP
MAIN BASE
DETAIL A

Fig. 37 Gear Loading "L", "R" Ass'y Removal

2-7-11. Review Arm Ass'y Removal

1. Remove the washer slit ①.
2. Lift up the full review arm ass'y ②.

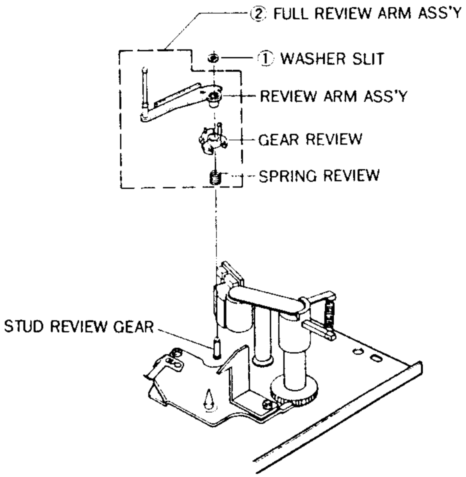

② FULL REVIEW ARM ASS'Y
① WASHER SLIT
REVIEW ARM ASS'Y
GEAR REVIEW
SPRING REVIEW
STUD REVIEW GEAR

Fig. 38 Review Arm Ass'y Removal

2-7-12. Drive Cam Pinch Ass'y Removal

1. Remove two (2) screws ①.
2. Lift up the drive cam pinch ass'y ②.

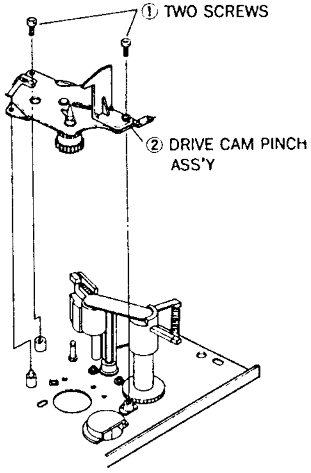

① TWO SCREWS
② DRIVE CAM PINCH ASS'Y

Fig. 39 Drive Cam Pinch Ass'y Removal

2-7-13. Pinch Roller Unit & Gear Escalator Removal

1. Remove the spring pinch roller ①.
2. Remove the washer slit ②.
3. Lift up the arm pinch ass'y ③.
4. Lift up the holder escalator ④ and the gear escalator ⑤.

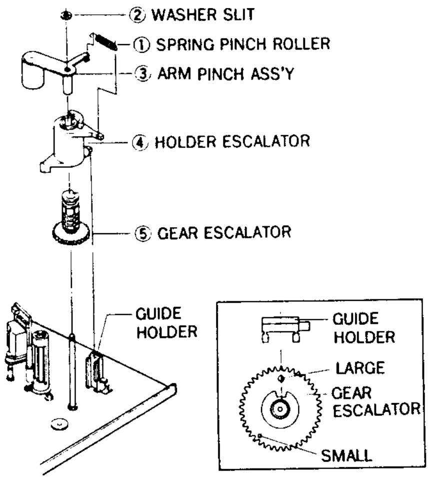

② WASHER SLIT
① SPRING PINCH ROLLER
③ ARM PINCH ASS'Y
④ HOLDER ESCALATOR
⑤ GEAR ESCALATOR
GUIDE HOLDER
GUIDE HOLDER
LARGE
GEAR ESCALATOR
SMALL

Fig. 40 Pinch Roller Unit & Gear Escalator Removal

2-7-14. Reassembly of Unit Drive Pinch Ass'y and Gear Escalator

1. Align the hole of the bracket pinch drive ① with the hole of the gear cam drive ②.
   (Refer to timing (A) in Fig. 41)
2. Align the hole of the bracket pinch drive ① with the hole of the gear cam pinch ③.
   (Refer to timing (B) in Fig. 41)
3. Align the protrusion on the side of the gear relay pinch ④ with the hole of the gear cam drive ②.
   (Refer to timing (C) in Fig. 41)
4. Install the gear escalator on the shaft and align the holes.
   (Refer to timing in Fig. 40)
5. While installing align the arrow mark of the gear cam pinch ③ with the hole of the gear escalator ⑤.
   (Refer to timing (D) in Fig. 42)
6. When aligning the timing (D), be sure to line up the timing (A), (B), (C).
7. Install the two (2) screws.

Bottom View of Drive Pinch Ass'y

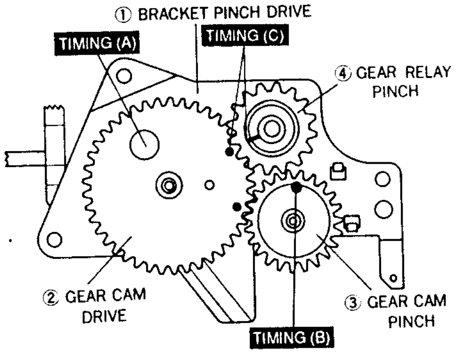

① BRACKET PINCH DRIVE
TIMING (A)
TIMING (C)
④ GEAR RELAY PINCH
② GEAR CAM DRIVE
③ GEAR CAM PINCH
TIMING (B)

Fig. 41 Timing of Gear Cam Drive, Gear Cam Pinch & Gear Relay Pinch

Top View of Drive Pinch Ass'y

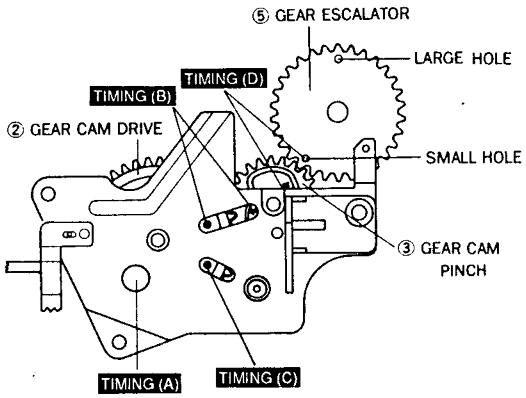

⑤ GEAR ESCALATOR
LARGE HOLE
TIMING (D)
TIMING (B)
② GEAR CAM DRIVE
SMALL HOLE
③ GEAR CAM PINCH
TIMING (A)
TIMING (C)

Fig. 42 Reassembly of Drive Pinch Ass'y & Gear Escalator

2-7-15. Reassembly of Full Review Arm Ass'y

1. Assemble the full review arm ass'y ① so that the gear review ② is touching the review stopper ③ as shown in Fig. 43.
2. Install the washer slit.

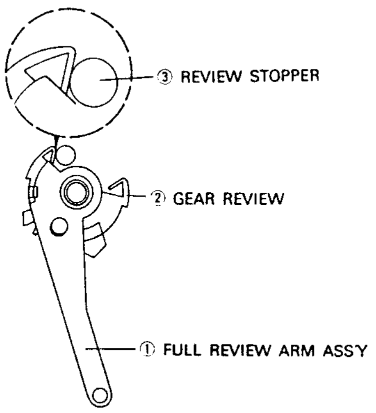

③ REVIEW STOPPER
② GEAR REVIEW
① FULL REVIEW ARM ASS'Y

Fig. 43 Reassembly and Timing of Full Review Arm Ass'y

2-7-16. Reassembly of Gear Loading "L", "R" Ass'y

1. Reassemble the gear loading L/R ass'y in the eject mode while aligning the timing mark.
   (Refer to Fig. 44)

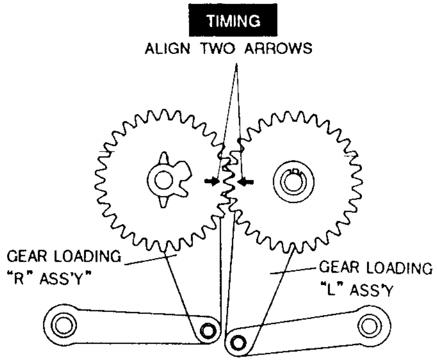

TIMING
ALIGN TWO ARROWS
GEAR LOADING "R" ASS'Y
GEAR LOADING "L" ASS'Y

Fig. 44 Reassembly of Gear Loading "L", "R" Ass'y

2-7-17. Timing of Slide Main

1. Install the brake D/D capstan, lever tension control and slide I.B ass'y.
2. Install the slide main between brake D/D capstan and brake main "L" , while pulling the brake D/D capstan and the brake main"L" toward arrow (A) and (B) respectively.
3. At the same time, make sure the brake sub "L" and the pole base is located as shown in the Fig. 45.
4. Install the slit washer plain and one screw.

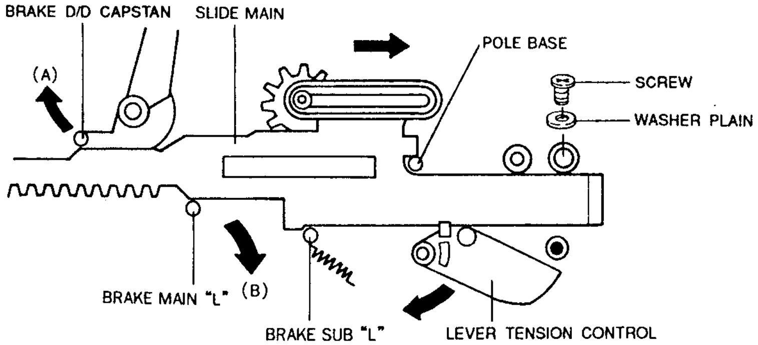

BRAKE D/D CAPSTAN
SLIDE MAIN
POLE BASE
(A)
SCREW
WASHER PLAIN
BRAKE MAIN "L"
(B)
BRAKE SUB "L"
LEVER TENSION CONTROL

Fig. 45 Timing of Slide Main

2-7-18. Reassembly and Timing of Program S/W & Gear Master

1. Align two arrows on the program S/W ①. (Refer to timing (A))
2. After aligning timing (A) completely, install the gear master ② so that the boss on the program S/W ① is inserted into the small hole of gear master ②. (Refer to timing (B))
3. Install the gear worm wheel and then washer slit.

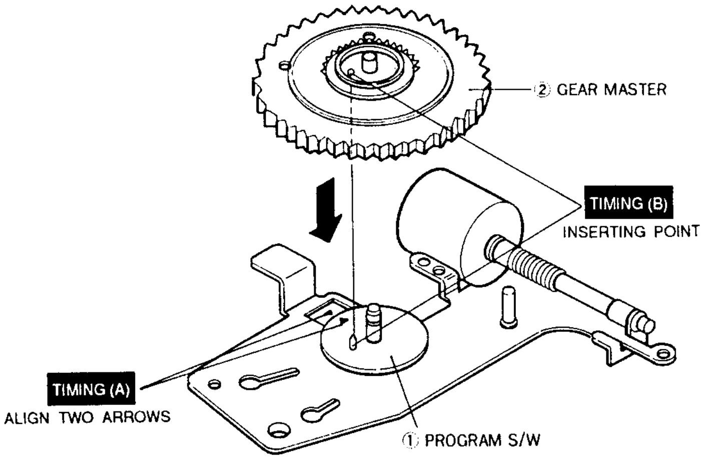

② GEAR MASTER
TIMING (B)
INSERTING POINT
TIMING (A)
ALIGN TWO ARROWS
① PROGRAM S/W

Fig. 46 Reassembly and Timing of Program S/W & Gear Master

2-7-19. Timing of Gear Master & Gear Eject Drive

1. Install the gear eject drive.
2. Install the loading unit and align the slot #2 of the gear eject drive ① with the hole of the gear master ②. (Refer to timing (A) in Fig. 47)
3. At this time, make sure that the arrow marks of the gear relay pinch ③ and the gear master ② are aligned correctly. (Refer to timing (B) in Fig. 47)

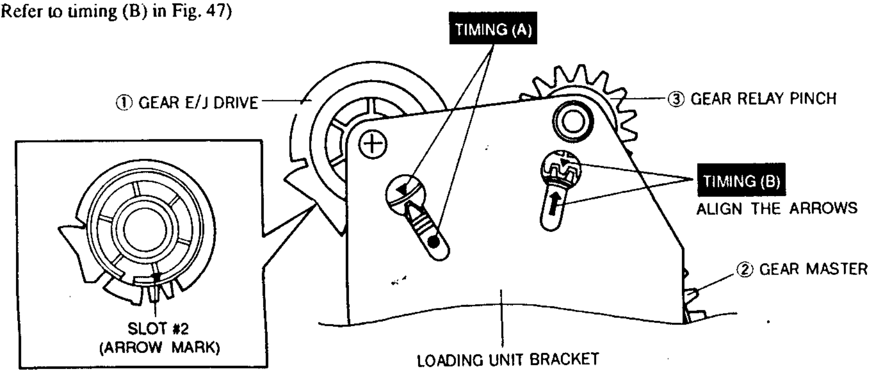

TIMING (A)
① GEAR E/J DRIVE
③ GEAR RELAY PINCH
TIMING (B)
ALIGN THE ARROWS
② GEAR MASTER
SLOT #2
(ARROW MARK)
LOADING UNIT BRACKET

Fig. 47 Timing of Gear Master & Gear Eject Drive

2-8. TAPE TRANSPORT ASS'Y REMOVAL

2-8-1. Pole Base "L", "R" Ass'y Removal

1. Remove cylinder ass'y. (Refer to 2-5-1)
2. Move the pole base "L", "R" ass'y ①, ② to the end of slot.
3. Lift up the pole base "L", "R" ass'y ①, ②.

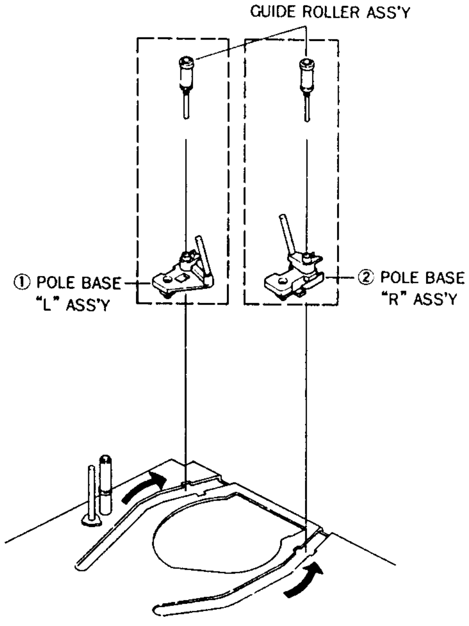

GUIDE ROLLER ASS'Y
① POLE BASE
"L" ASS'Y
② POLE BASE
"R" ASS'Y

Fig. 48 Pole Base "L", "R" Ass'y Removal

2-8-2. Head Magnetic F/E Removal (Fig. 49)

1. Remove one (1) screw ① holding the full erase head ②.
2. Unsolder the F/E head P.C.B. ② from the head magnetic F/E ③.
3. Lift up the head magnetic F/E ③.

2-8-3. A/C Head Ass'y Removal (Fig. 50)

1. Remove two (2) screws ①.
2. Lift up A/C head ass'y ②.
3. Reinstall in reverse order.

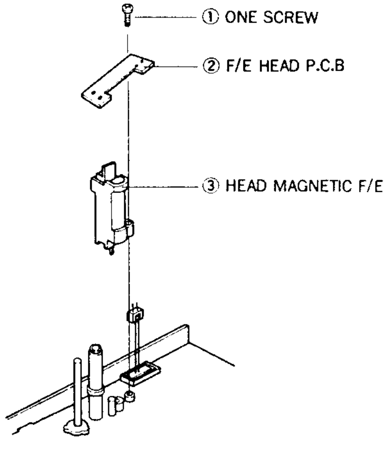

① ONE SCREW
② F/E HEAD P.C.B
③ HEAD MAGNETIC F/E

Fig. 49 Head Magnetic F/E Removal

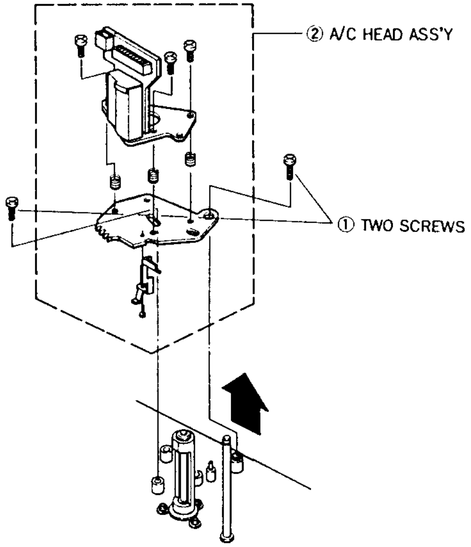

② A/C HEAD ASS'Y
① TWO SCREWS

Fig. 50 A/C Head Ass'y Removal

3. MECHANICAL ADJUSTMENT

3-1. TAPE TRANSPORT SYSTEM

Note :
The tape transport system has been adjusted precisely in the factory. Alignment is not necessary except for the followings :
- Noises observed on the screen.
- Tape damage.
- Parts replacement in the tape transport system.

3-1-1. Location of Tape Transport Adjustment (Adjustment Reference)

Lower flange height of tape guide is used as the basic reference for the transport adjustment.
To keep height of the tape guide, do not apply excessive force onto the main base to prevent damage.

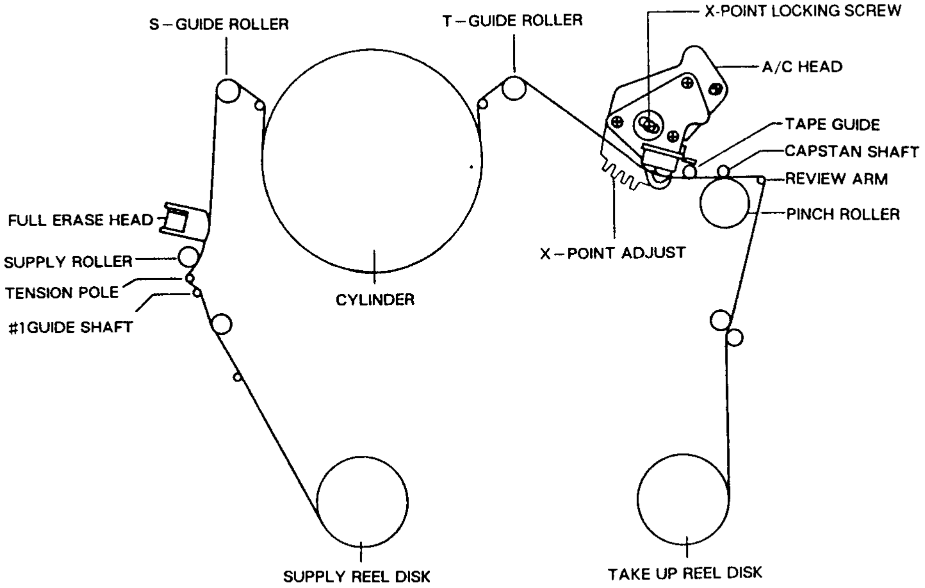

S-GUIDE ROLLER
T-GUIDE ROLLER
X-POINT LOCKING SCREW
A/C HEAD
TAPE GUIDE
CAPSTAN SHAFT
REVIEW ARM
PINCH ROLLER
X-POINT ADJUST
FULL ERASE HEAD
SUPPLY ROLLER
TENSION POLE
#1GUIDE SHAFT
CYLINDER
SUPPLY REEL DISK
TAKE UP REEL DISK

Fig. 1 Location of Tape Transport Adjustment

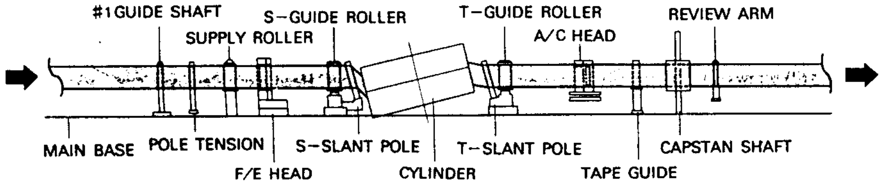

#1GUIDE SHAFT
S-GUIDE ROLLER
SUPPLY ROLLER
T-GUIDE ROLLER
A/C HEAD
REVIEW ARM
MAIN BASE
POLE TENSION
F/E HEAD
S-SLANT POLE
CYLINDER
T-SLANT POLE
TAPE GUIDE
CAPSTAN SHAFT

Fig. 2 Tape Travel Diagram

3-1-2. Tape Transport System Adjustment

1) Pre-adjustment

When the part(s) are replaced, perform required adjustments by referring to procedures for the tape transport system. When the part (s) are replaced, the tape path may be changed.
First run a E-180 tape and make sure excessive tape wrinkle does not occur at each tape guide.

1. If tape wrinkle is observed at the S, T-guide rollers, turn the S,T-guide rollers until wrinkle disappears.
2. If the tape wrinkle is still observed at the tape guide, perform the tilt adjustment of the A/C head.

2) Adjustment procedure

1. A/C head assembly adjustment

Test Point : TP402 (Envelope)
Audio Out Jack (Audio Out)
TP403 (H'D SW - Trigger)
Test Tape : SR2-2 (Color Bar ; 1KHz)
SR1-2 (Mono Scope ; 6KHz)
Blank Tape (E-240)

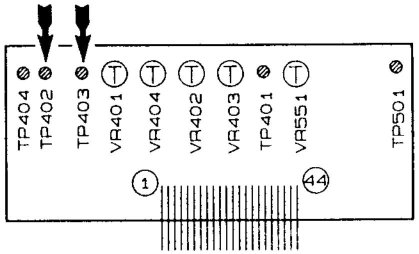

TP404
TP402
TP403
VR401
VR404
VR402
VR403
TP401
VR551
TP501
1
44

Fig. 3 Location of Test Point (Main B PCB)

a. A/C head height adjustment

1. Run the alignment tape SR2-2 in the playback mode.
2. Observe surface of the audio head using a dental mirror.
3. Turn screw (A), (B), (C) clockwies or counterclockwise until the gap of lower tape edge and the lower edge of the control head is about 0.25 mm.
(Refer to Fig. 4 and 5)

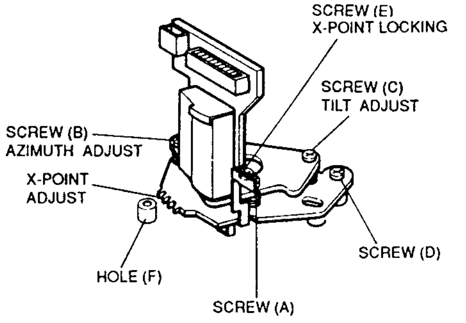

SCREW (E)
X-POINT LOCKING
SCREW (C)
TILT ADJUST
SCREW (B)
AZIMUTH ADJUST
X-POINT
ADJUST
SCREW (D)
HOLE (F)
SCREW (A)

Fig. 4 Location of A/C Head Adjustment Screw

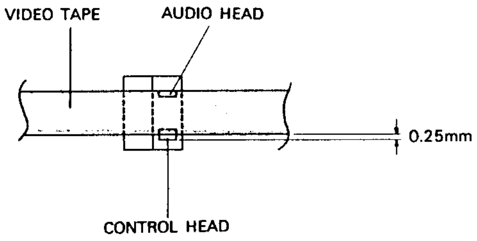

VIDEO TAPE
AUDIO HEAD
0.25mm
CONTROL HEAD

Fig. 5 A/C Head Height Adjustment

b. A/C head tilt adjustment

1. Playback a E-240 tape and observe position of the tape at the lower flange of tape guide.
2. Confirm that there is no curl or wrinkle at the lower flange of tape guide as shown in Fig. 6 (B).
3. If a curl or wrinkle of the tape has occured, slightly turn the screw (C) tilt adjust on the A/C H'd ass'y clockwise until it disappears as shown in Fig. 6 (B).
4. Reconfirm the A/C head height.

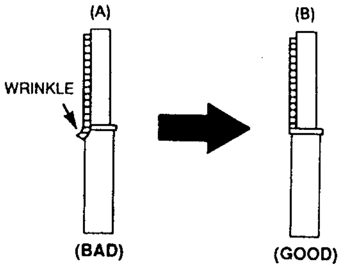

(A)
(B)
WRINKLE
(BAD)
(GOOD)

Fig. 6 Tape Guide Check

c. Audio azimuth adjustment

1. Load alignment tape (SR1-2 ; 6KHz) and playback the 6KHz signal.
2. Connect channel-1 scope probe to audio out jack.
3. Adjust screw (B) vertically to achieve maximum audio level. (See Fig. 4)

d. A/C head position (X-Point) adjustment

1. Remove the panel front.
2. Playback the SR1-2 alignment tape.
3. Connect channel-1 scope probe to TP402.
4. After playback operation, push the "TEST ADJ" button on the Function PCB and then push the PLAY button on the Main A PCB so that the tracking preset position is set to center.
5. Turn the screw (E) counterclockwise. (See Fig. 4)
6. Insert the adjusting driver (X-Point) into the hole (F) of main base and adjust the A/C head ass'y so that envelope waveform is maximum amplitude and then tighten the screw (E).

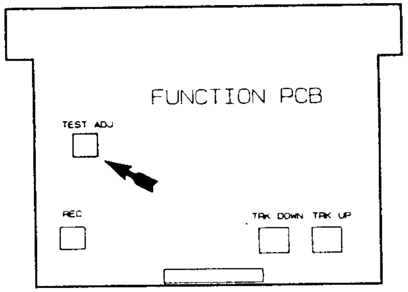

FUNCTION PCB
TEST ADJ
REC
TRK DOWN
TRK UP

Fig. 7 Location of "TEST ADJ" Button (Function PCB)

2. Linearity adjustment (S, T-guide rollers adjustment)

Test Point :	TP402 (Envelope) TP403 (H'D SW - Trigger)
Test Tape :	SR1-2 (Mono Scope ; 6KHz)

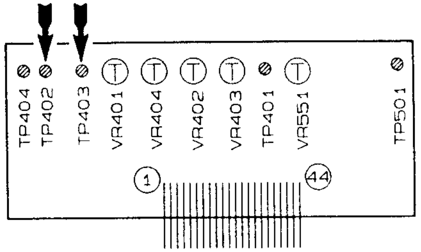
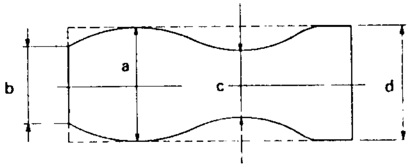

TP404
TP402
TP403
VR401
VR404
VR402
VR403
TP401
VR551
TP501
1
44

Fig. 8 Location of Test Point (Main B PCB)

1. Playback the SR1-2 alignment tape (SP mode).
2. Observe the video envelope signal on an oscilloscope triggered by the video switching pulse.
3. Make sure the video envelope waveform (in its minimum output) meets the specification shown in Fig. 9. If it does not, adjust as follows ;

Note :
a=Maximum output of the video RF envelope.
b=Minimum output of the video RF envelope at the entrance side.
c=Minimum output of the video RF envelope at the center point.
d=Minimum output of the video RF envelope at the exit side.



a b c d

$c, b, d/a \geqq 63\%$

Fig. 9 Envelope Waveform Adjustment

4. If the section A in Fig. 10 does not meet the specification, adjust the S-guide roller up or down.
5. If the section B in Fig. 10 does not meet the specification, adjust T-guide roller up or down.

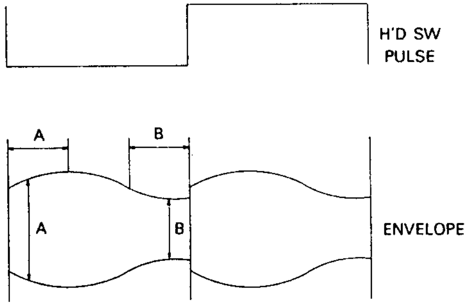

H'D SW PULSE
A
B
A
B
ENVELOPE

Fig. 10 Adjustment Points

6. Slightly loosen the set screw at the lower part of the S, T-guide rollers with a (Hex Wrench - 0.9mm) so that the guide roller can be adjusted with reasonable tightness. (Refer to Fig. 11)

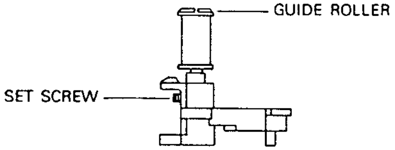

GUIDE ROLLER
SET SCREW

Fig. 11

7. Playback the SR1-2 alignment tape (SP mode).
8. Connect an oscilloscope CH-1 to the TP402 and CH-2 to the TP403 on the same PCB for triggering.
9. Turn the guide roller heads with a flat head (■) screw driver to obtain flat video RF envelope as shown in Fig. 12.
10. After the adjustment is completed, tighten the set screws.

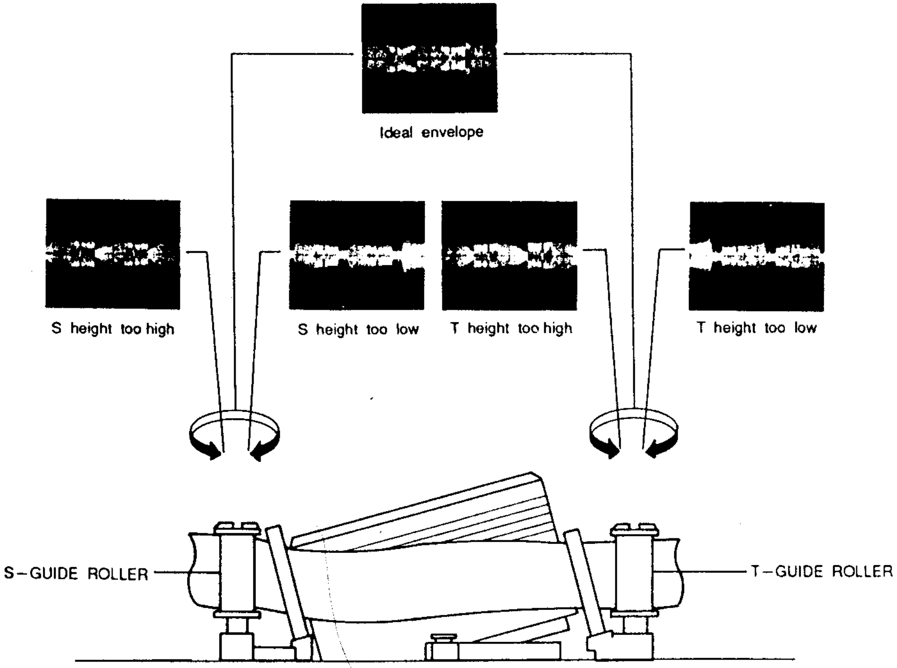

Ideal envelope
S height too high
S height too low
T height too high
T height too low
S-GUIDE ROLLER
T-GUIDE ROLLER

Fig. 12 S, T-Guide Roller Height Adjustments

3. Check for transitional operation from RPS to play

Check transition from RPS mode to play mode, using a pre-recorded SP tape, make sure the entrance side of envelope comes to an appropriate steady state within 3 seconds as shown in Fig. 13.

If the envelope waveform does not reach specified peak-to-peak amplitude within 3 seconds, adjust as follows :

1. Make sure there is no gap between the supply roller lower flange and the tape.
   If there is a gap, adjust the supply guide roller again.
2. Change operation mode from the RPS to the play mode again and make sure entrance side of envelope rises within 3 seconds.

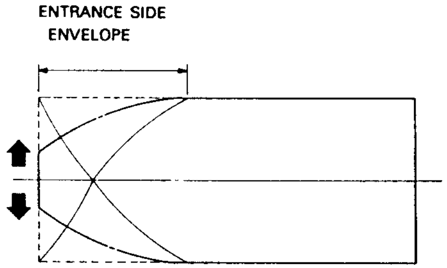


Fig. 13 Video envelope rising when operation mode changes from RPS to play mode.

4. Envelope check

1. Make recordings on E-120 and E-180 tapes, and make sure the playback output envelope meets the specification as shown in Fig. 14.
2. Playback a self recorded tape (recording made on this unit), (with a E-120) the video envelope should meet the specification as shown in Fig. 14.
   In SP mode, (A) should be same as (B).
   If the head gap is wide, upper cylinder should be checked.

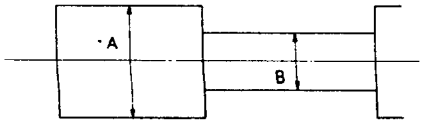


Fig. 14 Envelope Output and Output Level Difference

5. Tape wrinkle check

1. Run the E-240 tape in the playback, FPS, RPS and the pause mode and then observe tape wrinkle at each guide.
2. If excessive tape wrinkle is observed in the mode shown below, perform the associated adjustment shown below.

a. Playback mode

- Tape wrinkle at the S, T-guide roller section : Linearity adjustment.
- Tape wrinkle at tape guide flange : A/C head assembly coarse adjustment.

3-2. REEL TORQUE

3-2-1. Reel Torque

1. The rotation of the capstan motor operates the clutch ass'y through the belt capstan motor.
2. Brake operation and shift operation in FF/REW are done by a slide lever.
3. Transportation of accurate driving force is done by gears. (clutch ass'y)

MODE	TORQUE g/cm	GAUGE
PB/REC	100 ± 30	Cassette Torquement
RPS	170 ± 30	Cassette Torquement
FF/REW	Minimum 600	Torque Gauge

Note : If the spec is out of above chart, replace the clutch ass'y and then recheck.

3-2-2. Location of Tension Pole and Back Tension Adjustment

1. Remove the housing ass'y and set the deck to play mode.
2. Adjust the cam tension to 0 ~ −0.5mm from the center of supply roller.
3. The back tension meter should be used for checking back tension.

Check back tension, should be 40 ~ 47g.cm.
If not, adjust cam tension.

Counterclockwise : Torque UP
Clockwise : Torque DOWN

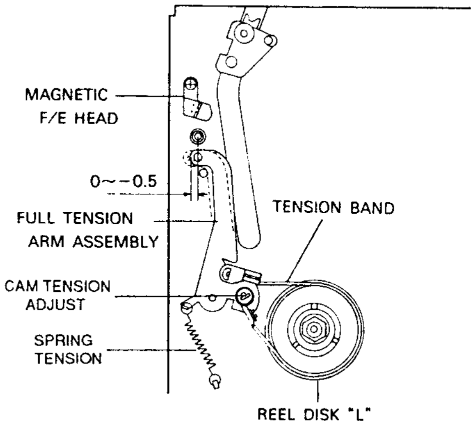


Fig. 15 Tension Pole and Back Tension Adjustment

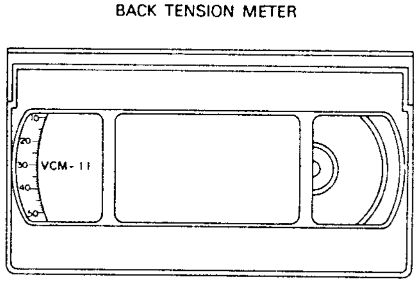


Fig. 16 Back Tension Tape Torque Cassette

4. ELECTRICAL ADJUSTMENTS

4-1. PREPARATION

Electrical adjustments are required after replacing circuit components and certain mechanical parts.
It is important to perform these adjustment only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.

4-1-1. Required Test Equipment

1. Color Television or Monitor.
2. Oscilloscope : wide-band, dual-trace, triggered delayed sweep.
3. Trackingscope.
4. AC Voltmeter.
5. Recording tape. (Blank tape)
6. Alignment tapes : SR1-2, SR2-2, SR2-3

Tapes	Video Signal	Audio Signal
SR1-2	Mono Scope	6 KHz
SR2-2	Color Bars	1 KHz
SR2-3 (SECAM)	Color Bars	1 KHz

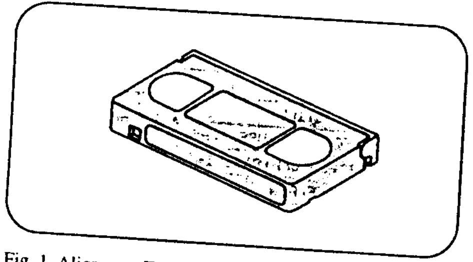


Fig. 1 Alignment Tape

7. Pattern Generator : PAL color bar. 100% White.

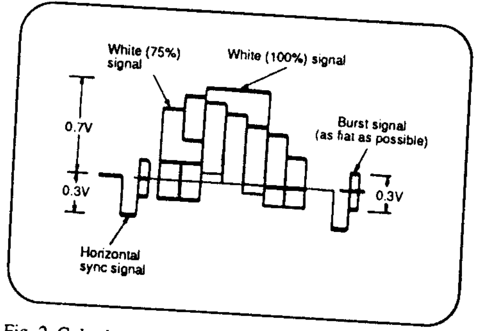
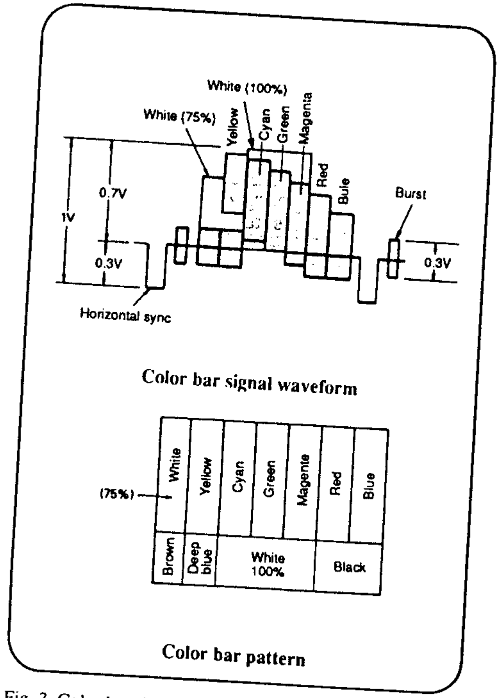

White (75%) signal
White (100%) signal
0.7V
0.3V
Burst signal (as flat as possible)
0.3V
Horizontal sync signal

Fig. 2 Color bar signal of pattern generator

(Color Bar Signal)
The 75% color bar signal recorded on the alignment tape is shown in Fig. 3.

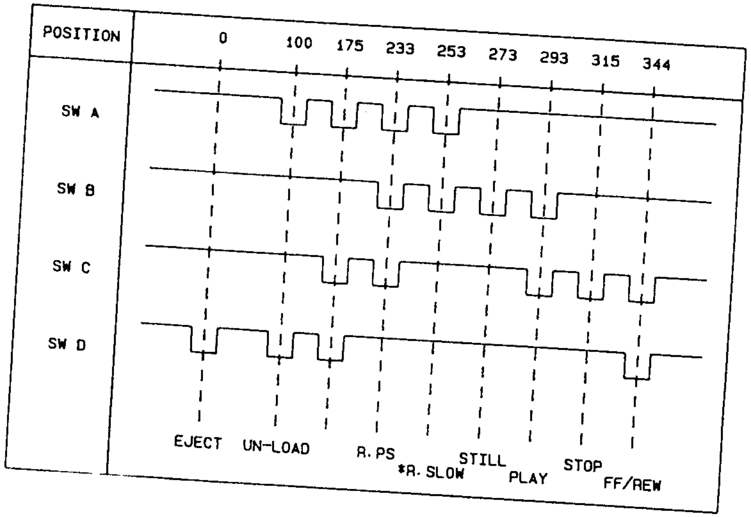

White (100%)
White (75%)
Yellow
Cyan
Green
Magenta
Red
Bule
Burst
0.7V
1V
0.3V
0.3V
Horizontal sync
(75%)
White
Yellow
Cyan
Green
Magenta
Red
Blue
Brown
Deep blue
White 100%
Black

Color bar signal waveform

Color bar pattern

Fig. 3 Color bar signal of alignment tape

4-2. PROGRAM SWITCH TIMING CHART


POSITION
0
100
175
233
253
273
293
315
344
SW A
SW B
SW C
SW D
EJECT
UN-LOAD
R. PS
*R. SLOW
STILL
PLAY
STOP
FF/REW

*UN USE MODE

POSITION	CAM SW				MODE
	A	B	C	D	
EJECT	1	1	1	0	EJECT
UN-LOAD	0	1	1	0	UN-LOAD
R. PS	0	0	0	1	R. PS, Z-R. PS
*R. SLOW	0	0	1	1	*R. SLOW
STILL	1	0	1	1	STILL
PLAY	1	0	0	1	T-STOP, PLAY, REC, REC_PAUSE, F. PS, Z-F. PS
STOP	1	1	0	1	STOP, POWER OFF(CASS-IN)
FF/REW	1	1	0	0	FF, REW

4-3. SERVO & VIDEO, AUDIO ADJUSTMENT

STEP	ADJUSTMENT ITEM
1. MODE and INPUT SIG-NAL/ALIGNMENT TAPE 2. TEST POINT and ADJ. part 3. RESULT & REMARKS	

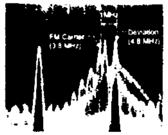
ADJ. part →

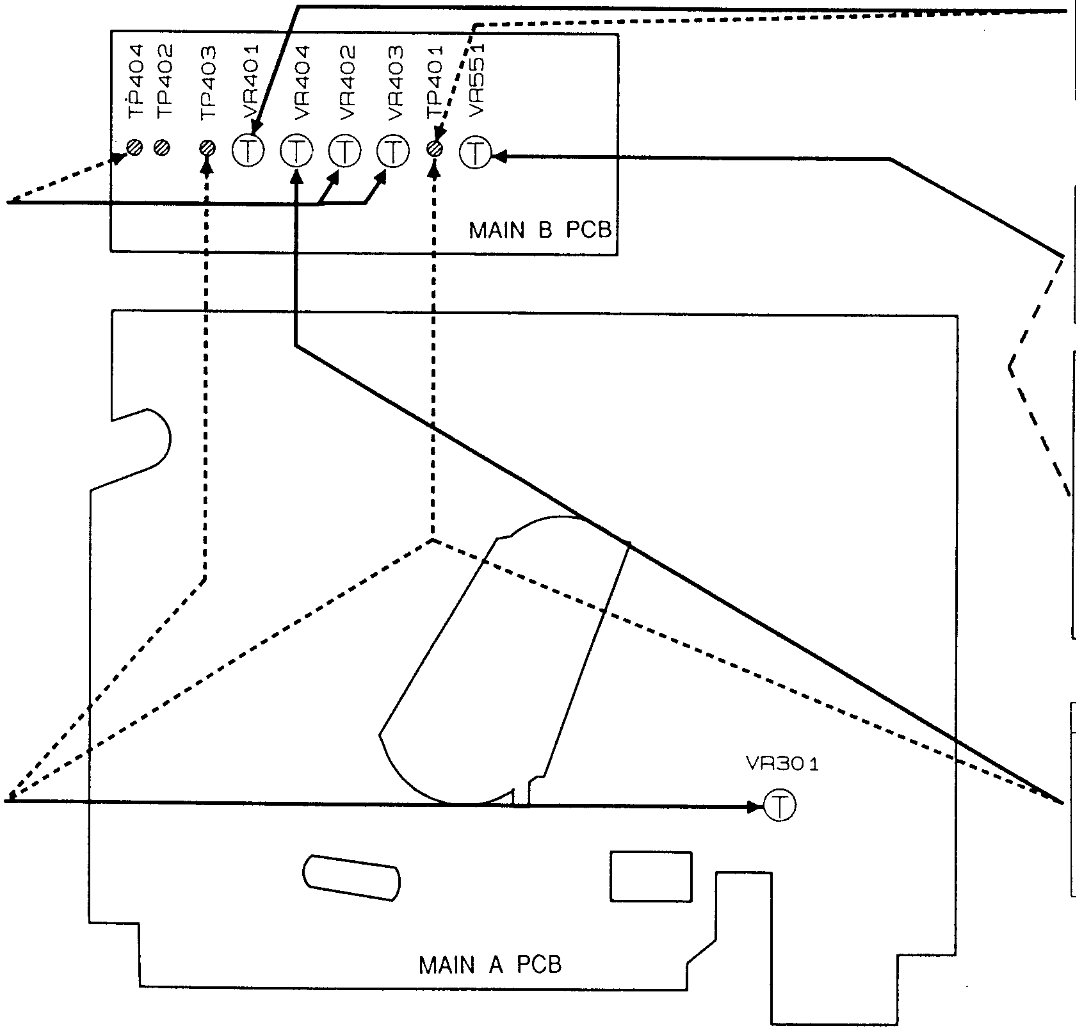
Test Point - - →

Note : The steps 2, 4, 5 are applied to only REC model (VK-30R/31R/32R).

4	FM CARRIER & DEVIATION

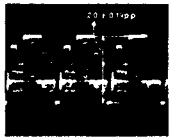
1. "REC", 100% white signal (V.IN jack on the rear panel).
2. TP404 (FM C/D) & VR402 (DEVIATION), VR403 (FM CARRIER).
3.
   - Connect tracking scope to TP404.
   - Adjust VR403 so that the frequency is 3.8 ± 0.1 MHz.
   - Adjust VR402 so that the frequency is 4.8 ± 0.1 MHz.





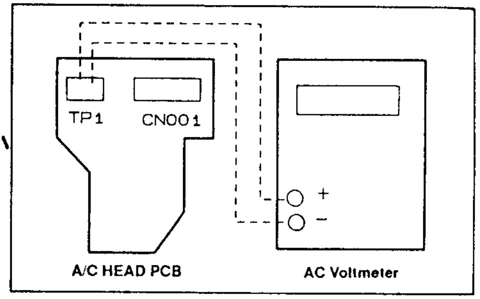
3	VIDEO PB LEVEL

1. "PB", Alignment tape SR2-2.
2. TP401 (VIDEO OUT) & VR401 (PB LEVEL).
3.
   - Connect an oscilloscope CH-1 to TP401.
   - Adjust VR401 so that PB level be comes 2.0 ± 0.1 Vp-p.



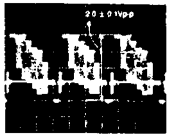
5	AUDIO BIAS LEVEL

1. "REC", (no signal input)
2. TP1 on the A/C head PCB & VR551
3.
   - Connect AC voltmeter probes to TP1.
   - Adjust VR551 so that the reading on the AC voltmeter becomes 2.7mVrms.



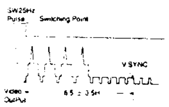
2	VIDEO E-E LEVEL

1. "E-E" (stop mode), PAL color bar signal (V.IN jack on the rear panel).
2. TP401 (VIDEO OUT) & VR404 (E-E LEVEL).
3.
   - Connect an oscilloscope CH-1 to TP401.
   - Adjust VR404 for 2.0 ± 0.1 Vp-p from sync tip to white peak level.



1	SWITCHING POINT

1. "PB", Alignment tape SR2-2.
2. TP403 (Hd SW P), TP401 (VIDEO OUT) & VR301 (SW POINT).
3.
   - Connect an oscilloscope's CH-1 to TP403 for triggering and CH-2 to TP401.
   - Adjust VR301 so that the switching point is positioned 6.5 ± 0.5 H from the V-SYNC left edge as shown.



4-4. SECAM ADJUSTMENT

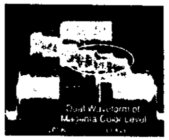
STEP	ADJUSTMENT ITEM
	1. MODE and INPUT SIGNAL/ALIGNMENT TAPE 2. TEST POINT and ADJ. part 3. RESULT & REMARKS

ADJ. part ⟶
Test Point - - - ➤

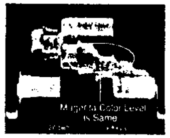
Note : The step 1 are applied to only REC model (VK-30R/31R/32R).

2 PB ANTI-BELL

1. "PB", Alignment tape SR2-3
2. TP401 (Main B PCB) & FL4202 (Main A PCB)
3. * Connect an oscilloscope CH-1 to TP401
   * Adjust FL4202 so that the magenta of color in 100% white level do not make a "Doubling Picture".



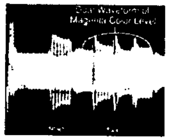
(Bad)



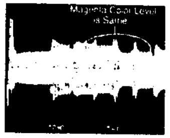
(Good)

1 REC ANTI-BELL

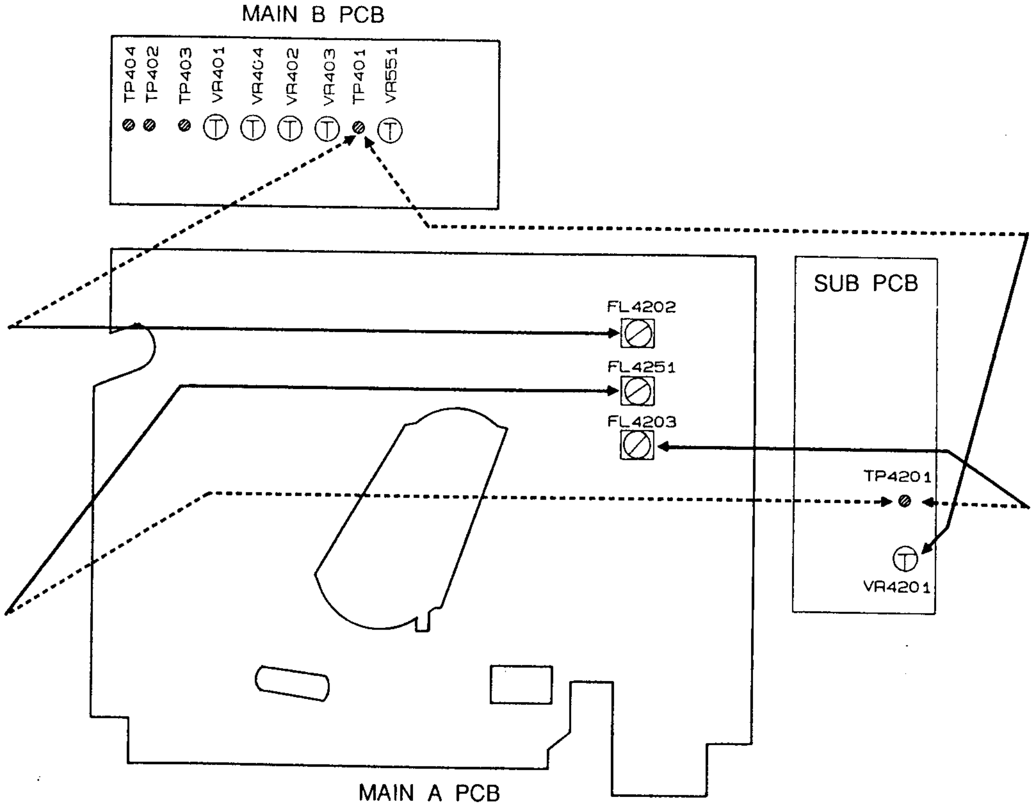
1. "REC", SECAM color bar signal (V.IN jack on the rear panel)
2. TP4201 (SUB PCB) & FL4251 (Main A PCB)
3. * Connect an oscilloscope CH-1 to TP4201.
   * Adjust FL4251 so that the CH1 and CH2 of the magenta color level are same.



(Bad)

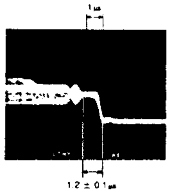


(Good)


MAIN B PCB
TP404
TP402
TP403
VR401
VR404
VR402
VR403
TP401
VR551
FL4202
FL4251
FL4203
SUB PCB
TP4201
VR4201
MAIN A PCB

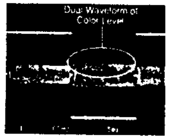
4 VIDEO SYNC TIMING

1. "PB", Alignment tape SR2-3
2. TP401 (Main A PCB) & VR4201 (SUB PCB)
3. * Connect an oscilloscope CH-1 to TP401.
   * Adjust VR4201 so that the noise gate pulse position is 1.2 ± 0.1µ sec from the H-SYNC signal.

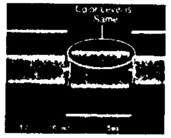


3 PB BELL

1. "PB", Alignment tape SR2-3
2. TP4201 (SUB PCB) & FL4203 (Main A PCB)
3. * Connect an oscilloscope CH-1 to TP4201.
   * Adjust FL4203 so that the top and bottom part is as flat as possible.



(Bad)



(Good)

5. ELECTRICAL PARTS LIST

5-1. GENERAL INFORMATION

1. Parts Replacement

> *Many electrical and mechanical parts in Video Cassette Recorder (Player) have special safety-related characteristics. These characteristics are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual ; electrical components having such features are identified by ⚠ in the replacement parts lists and schematic diagrams. The use of a replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.*

2. Unless otherwise specified :

1) All resistors are in ohms (Ω)

- K = 1,000
- M = 1,000K

* **RD** : 1/4W, ± 5% Carbon
* **RM** : 1/8W, ± 5% Metal-film

2) All capacitors are in ± 10%, MF = μF.

* CC : PF = uuF, Ceramic, Temp
* CK : PK = uuF, Ceramic, MK
* CS : Tantalium
* CQ : Polyester
* CE : Electrolytic

3) All coils are in microhenry (uH)

- 1mH = 1,000uH

3. ASS'Y = Assembly

4. ⚠ Mark : Safety related parts.

5. How to order replacement parts

To have your order filed promptly and correctly, please furnish the following informations.

1) Model Number
2) Location Number
3) Part Number
4) Description & Specification

5-2. ELECTRICAL REPLACEMENT PARTS LIST

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
660	69097-420-810	REGULATOR ASSY;P-6 100-240V AC (PAL)
C001	A1100-0450	C-CERAMIC;CK45B 400V 222M 12/SC E 2G 222M
C002	A1100-0450	C-CERAMIC;CK45B 400V 222M 12/SC E 2G 222M
C003	A1100-0450	C-CERAMIC;CK45B 400V 222M 12/SC E 2G 222M
C004	A1100-0450	C-CERAMIC;CK45B 400V 222M 12/SC E 2G 222M
C005	A1100-0450	C-CERAMIC;CK45B 400V 222M 12/SC E 2G 222M
C006	A1100-0450	C-CERAMIC;CK45B 400V 222M 12/SC E 2G 222M
C007	61419-001-001	C-FILM;KNB1530 0.1UF/AC250V
C008	A1104-0396	C-ELEC;CE 04 H 200V T 4R7-M KME/STX -25/105
C009	61659-611-101	C-ELECTROLYTIC;CE04W 100uF/400V
C011	61419-001-004	C-POLYESTER;6TM2JRB 473K 630V
C012	61507-121-430	C-POLYESTER;CQ921M TAPG 100V 472-K
C013	61507-121-510	C-POLYESTER;CQ921M TAPG 100V 223-K
C014	61617-406-330	C-ELEC;CEAP 35V 33M RSS(8X9)
C015	61507-121-360	C-POLYESTER;CQ921M TAPG 50V 152-K
C016	61609-413-040	C-ELECTROLYTIC;CE04W 50V 10M(SE)
C017	A1104-0290	C-ELEC;CE04C 25V 1000M STX10X20(105C)
C018	A1104-0373	C-ELEC;CE 04 F 25V T 331-M STX/KME -40/105
CN001	A6010-0416	CONNECTOR WAFER;28-5095-005-808 BLK
D001	B4104-0040	DIODE-BRIDGE;DI106 600V 1A P
D002	B4102-0006	DIODE-FR;EG01C(3.3)V 500MA (0.1)US
D003	62169-406-482	DIODE;1N4148 SAMSUNG
D004	B4102-0003	DIODE-FR;PS102R 200V 1A 150NST
D005	B4102-0003	DIODE-FR;PS102R 200V 1A 150NST
D006	B4102-0016	DIODE-FR;UF304 1.3V 3A 50NS
F001	64709-085-040	FUSE;T1.6A 250V 218 5X20MM LT EUR
IC001	B4010-0015	IC-HYBRID;STR11006 SMPS SIP
L001	64529-420-230	LINE FILTER;SHL 030
L002	A1130-0017	COIL-CHOCK;20UH MP
Q001	A4050-0001	TRANSISTOR;2SD 1468SQ
R001	A1014-0011	R-CEMENT;RWC 2 R 2R7-K
R002	A1004-0196	R-METAL OXIDE;RS 1/2 T(S) 154-J
R003	A1004-0197	R-METAL OXIDE;RS 1/2 T(S) 124-J
R004	A1004-0197	R-METAL OXIDE;RS 1/2 T(S) 124-J
R005	A1004-0248	R-METAL OXIDE;RS 3 N 683-J
R006	61049-427-689	R-MATAL OXIDE;RS 1P 0.68-J
R007	61048-177-109	R-METAL FILM;RM 1/8TS 1-J
R008	A1004-0282	R-METAL OXIDE;RS 1 P 750-J
R009	61048-177-182	R-METAL FILM;RM 1/8TS 1.8K-J
R010	A1004-0282	R-METAL OXIDE;RS 1 P 750-J
T001	A1206-0007	TRANS-SWITCHING;P:100-240V S:15V
ZD001	A4106-0069	DIODE-ZENER;UZP-22B 20.9/23.1V 10MA T

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LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
	69099-628-110	REMOCON ASSY;PAL REC
	69099-628-120	REMOCON ASSY;PAL W/O REC
	64043-0060-00	DOOR-BATTERY;ABS94HB T1.8 BLK PT-995HC
CT01	61637-805-479	C-ELEC;CEAP 25V 4.7M SE(4X5)
CT02	61409-101-360	C-CERAMIC.TEMP;CC45 SL 50V 100-J
CT03	61409-101-360	C-CERAMIC.TEMP;CC45 SL 50V 100-J
ICT01	A4002-0064	IC-MCU;KS51800-05 VCR SOP
LDT01	62309-112-041	LED-IR;GL538
LDT02	62309-112-041	LED-IR;GL538
QT01	62137-702-020	TRANSISTOR;KSC 1008-Y TAPG
RT01	61048-177-109	R-METAL FILM;RM 1/8TS 1-J
RT02	61048-177-564	R-METAL FILM;RM 1/8TS 560K-J
XT01	64539-102-311	CERAMIC RESONATOR;CSB 455 EBL

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
670	69672-403-201	FUNCTION ASSY;VK/PK-30R 32R
	69672-403-202	FUNCTION ASSY;VK/PK-31R
C601	61637-504-101	C-ELEC;CEAP 16V 100M SG(6.3X11)
C602	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
CN601	B6010-0159	CONNECTOR-WAFER;5082-3110-20
LD601	62309-112-140	LED;KLG 123E(GREEN)
LD602	62309-112-140	LED;KLG 123E(GREEN)
LD603	62309-112-140	LED;KLG 123E(GREEN)
LD604	62309-110-340	LED;GL-3HD7/GL3HD8
LD605	62309-112-140	LED;KLG 123E(GREEN)
LD606	62309-112-140	LED;KLG 123E(GREEN)
LD607	62309-112-140	LED;KLG 123E(GREEN)
LD608	62309-112-140	LED;KLG 123E(GREEN)
LD609	62309-112-140	LED;KLG 123E(GREEN)
LD610	62309-110-340	LED;GL-3HD7/GL3HD8
LD611	62309-110-340	LED;GL-3HD7/GL3HD8
R601	61048-177-151	R-METAL FILM;RM 1/8TS 150-J
R602	61048-177-151	R-METAL FILM;RM 1/8TS 150-J
R603	61048-177-151	R-METAL FILM;RM 1/8TS 150-J
R604	61048-177-151	R-METAL FILM;RM 1/8TS 150-J
R605	61048-177-151	R-METAL FILM;RM 1/8TS 150-J
R606	61048-177-151	R-METAL FILM;RM 1/8TS 150-J
R607	61048-177-151	R-METAL FILM;RM 1/8TS 150-J
R608	61048-177-151	R-METAL FILM;RM 1/8TS 150-J
R609	61048-177-151	R-METAL FILM;RM 1/8TS 150-J
R610	61048-177-151	R-METAL FILM;RM 1/8TS 150-J
RM601	A1294-0007	MODULE-REMOCON;ORC-02H 40KHZ 940
SW601	63599-016-070	SW-TACT;EVQ-QS2 05K
SW602	63599-016-070	SW-TACT;EVQ-QS2 05K
SW603	63599-016-070	SW-TACT;EVQ-QS2 05K
SW604	63599-016-070	SW-TACT;EVQ-QS2 05K
SW605	63599-016-070	SW-TACT;EVQ-QS2 05K
SW606	63599-016-070	SW-TACT;EVQ-QS2 05K

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
600	69657-403-210	MAIN A ASSY;REC MODEL (VK-SERIES)
	69657-403-209	MAIN A ASSY;W/O REC MODEL (PK-SERIES)

SYSTEM CONTROL PARTS

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
	62569-002-324	RF CONVERTER;RMUP 73655FB(B/G D/K)
	63334-705-121	DOUBLE PIN JACK;DSP-8906(BEND)
	B4008-0086	IC;LM7806CT SIP
	A3040-0070	JACK-DC;PI1.4 SD-J109-6 3P
C703	61617-404-470	C-ELEC;CEAP 16V 47M RSS(6.3X7)
C704	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C705	61617-404-101	C-ELEC;CEAP 16V 100M RSS(6.3X7)
C706	61617-408-010	C-ELEC;CEAP 50V 1M RSS(4X7)
C707	61407-117-101	C-CERAMIC.AXIAL;UP050F 104Z
C710	61507-121-481	C-POLTESTER;CQ921M TAPG 50V 153-J
C711	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C712	61407-117-101	C-CERAMIC.AXIAL;UP050F 104Z
C713	61407-117-101	C-CERAMIC.AXIAL;UP050F 104Z
C714	61407-117-101	C-CERAMIC.AXIAL;UP050F 104Z
C715	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C716	61617-404-101	C-ELEC;CEAP 16V 100M RSS(6.3X7)
C718	61617-404-101	C-ELEC;CEAP 16V 100M RSS(6.3X7)
C719	61617-404-470	C-ELEC;CEAP 16V 47M RSS(6.3X7)
C720	61407-117-101	C-CERAMIC.AXIAL;UP050F 104Z
C723	61617-404-470	C-ELEC;CEAP 16V 47M RSS(6.3X7)
C724	61417-110-621	C-CERAMIC;CK45F TAPG 50V 683-Z
C725	61617-408-010	C-ELEC;CEAP 50V 1M RSS(4X7)
C730	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C731	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C740	61617-404-470	C-ELEC;CEAP 16V 47M RSS(6.3X7)
CN701	A6010-0478	CONNECTOR-WAFER;18-5085-005-000-808 BLK
CN702	B6010-0256	CONNECTOR WAFER;52556-0790 WHT
CN705	B6010-0211	CONNECTOR-WAFER;5082-3010-20
CN706	B6010-0247	CONNECTOR-WAFER;TMC-E02X-A1 BLK
CN710	63053-916-583	LEAD CONNECTOR ASSY;1007 #26
D704	B4104-0047	DIODE-RECT;GP15D 200V 1.5A
D705	B4104-0046	DIODE-RECT;1N4002GP 200V 1A
D709	62169-406-482	DIODE;1N4148 SAMSUNG
D712	62169-406-482	DIODE;1N4148 SAMSUNG
D713	62169-406-482	DIODE;1N4148 SAMSUNG
D714	62169-406-482	DIODE;1N4148 SAMSUNG
D715	62169-406-482	DIODE;1N4148 SAMSUNG
IC701	67199-0097-00	MICOM;UPD75108GF-S32 QFP
IC702	62119-401-300	IC;KA8301(N.M)
IC703	62109-201-281	IC;MC7809
IC704	62119-401-314	IC;KIA7033P
IC705	62119-113-011	IC;MC78L09
IC706	62119-401-872	·IC;LM393(N.M)
L701	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K
LD701	62309-112-043	LED IR;GL-451(SHARP)
PT701	66419-0001-00	PHOTO INTERRUPTER;SG-105LF
Q701	A4050-0001	TRANSISTOR;2SD 1468SQ
Q702	62137-701-012	TRANSISTOR;KSR 1003 TAPG
Q703	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q704	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q705	62137-103-380	TRANSISTOR;KSA 733-Y TAPG
Q706	62137-701-012	TRANSISTOR;KSR 1003 TAPG
Q707	62137-701-012	TRANSISTOR;KSR 1003 TAPG
Q708	A4050-0001	TRANSISTOR;2SD 1468SQ
Q710	62137-701-012	TRANSISTOR;KSR 1003 TAPG
Q712	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q713	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q714	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q715	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q716	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
R701	61048-177-221	R-METAL FILM;RM 1/8TS 220-J
R702	61048-177-224	R-METAL FILM;RM 1/8TS 220K-J
R703	61048-177-391	R-METAL FILM;RM 1/8TS 390-J
R704	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R705	61048-177-104	R-METAL FILM;RM 1/8TS 100K-J
R706	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R707	61048-177-104	R-METAL FILM;RM 1/8TS 100K-J
R708	61048-177-104	R-METAL FILM;RM 1/8TS 100K-J

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
R709	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J
R711	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R712	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R713	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R714	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R715	61048-177-512	R-METAL FILM;RM 1/8TS 5.1K-J
R716	61048-177-512	R-METAL FILM;RM 1/8TS 5.1K-J
R717	61048-177-512	R-METAL FILM;RM 1/8TS 5.1K-J
R718	61048-177-512	R-METAL FILM;RM 1/8TS 5.1K-J
R719	61048-177-512	R-METAL FILM;RM 1/8TS 5.1K-J
R720	61048-177-393	R-METAL FILM;RM 1/8TS 39K-J
R721	61048-177-393	R-METAL FILM;RM 1/8TS 39K-J
R722	61049-429-398	R-METAL OXIDE;RS 2T 3.9-J
R724	61048-177-151	R-METAL FILM;RM 1/8TS 150-J
R725	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R726	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R730	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J
R731	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J
R732	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J
R733	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R734	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R735	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R736	61048-177-512	R-METAL FILM;RM 1/8TS 5.1K-J
R737	61048-177-512	R-METAL FILM;RM 1/8TS 5.1K-J
R738	61048-177-512	R-METAL FILM;RM 1/8TS 5.1K-J
R739	61048-177-512	R-METAL FILM;RM 1/8TS 5.1K-J
R740	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R741	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R742	61048-177-681	R-METAL FILM;RM 1/8TS 680-J
R747	61048-177-512	R-METAL FILM;RM 1/8TS 5.1K-J
R748	61048-177-562	R-METAL FILM;RM 1/8TS 5.6K-J
R749	61048-177-512	R-METAL FILM;RM 1/8TS 5.1K-J
R750	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J
R751	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R752	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R753	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R755	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J
R756	61048-177-821	R-METAL FILM;RM 1/8TS 820-J
R757	61048-177-470	R-METAL FILM;RM 1/8TS 47-J
R758	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J
R759	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J
R760	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J
R761	61048-177-182	R-METAL FILM;RM 1/8TS 1.8K-J
R762	61048-177-151	R-METAL FILM;RM 1/8TS 150-J
R763	61048-177-512	R-METAL FILM;RM 1/8TS 5.1K-J
R764	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R765	61048-177-622	R-METAL FILM;RM 1/8TS 6.2K-J
R766	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R767	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R768	61048-177-824	R-METAL FILM;RM 1/8TS 820K-J
R769	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R770	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R771	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R772	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R773	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R774	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R775	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R780	61048-177-750	R-METAL FILM;RM 1/8TS 75-J
R781	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
RS701	66209-0008-00	SWITCH-REC;MPU 10105 MMBO 5V
SN701	66219-0010-00	SENSOR-PHOTO TR;PT 493F
SN702	66219-0010-00	SENSOR-PHOTO TR;PT 493F
SW701	B3018-0012	SW-TACT;SKHVLJ/EVQPB105K(7.5X9)
SW702	B3018-0012	SW-TACT;SKHVLJ/EVQPB105K(7.5X9)
SW703	B3018-0012	SW-TACT;SKHVLJ/EVQPB105K(7.5X9)
SW704	B3018-0012	SW-TACT;SKHVLJ/EVQPB105K(7.5X9)
SW705	B3018-0012	SW-TACT;SKHVLJ/EVQPB105K(7.5X9)
SW706	B3018-0012	SW-TACT;SKHVLJ/EVQPB105K(7.5X9)
SW707	B3018-0012	SW-TACT;SKHVLJ/EVQPB105K(7.5X9)
SW708	B3018-0012	SW-TACT;SKHVLJ/EVQPB105K(7.5X9)
SW709	B3018-0012	SW-TACT;SKHVLJ/EVQPB105K(7.5X9)
XT701	64539-102-044	CERAMIC-RESONATOR;FCR 4.19MC
ZD701	62169-403-824	DIODE-ZENER;MTZ 9.1B

SERVO PARTS

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
C301	61507-121-481	C-POLTESTER;CQ921M TAPG 50V 153-J
C302	61617-404-100	C-ELEC;CEAP 16V 10M RSS(4X7)
C303	61617-404-100	C-ELEC;CEAP 16V 10M RSS(4X7)
C304	61617-404-100	C-ELEC;CEAP 16V 10M RSS(4X7)
C305	61617-404-100	C-ELEC;CEAP 16V 10M RSS(4X7)
C306	61627-208-010	C-ELEC;CEAP 50V 1M NP(6X11)
C307	61507-121-531	C-POLYESTER;CQ921M TAPG 50V 333-J
C308	61617-404-100	C-ELEC;CEAP 16V 10M RSS(4X7)
C309	61617-404-100	C-ELEC;CEAP 16V 10M RSS(4X7)
C310	61617-405-479	C-ELEC;CEAP 25V 4.7M RSS(4X7)
C311	61617-405-479	C-ELEC;CEAP 25V 4.7M RSS(4X7)
C313	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C314	61507-121-480	C-POLYESTER;CQ921M TAPG 100V 822-K
C315	A1102-0149	C-FILM;CF 922 P 100V T 224-J /C-M 365 26224/3E
C316	61507-121-341	C-POLYESTER;CQ921M TAPG 50V 102-J
C317	61417-104-282	C-CERAMIC.HK;CK45B TAPG 50V 102-K
C318	61617-404-220	C-ELEC;CEAP 16V 22M RSS(5X7)
C319	61617-404-100	C-ELEC;CEAP 16V 10M RSS(4X7)
C320	61407-117-223	C-CERAMIC.AXIAL;CAX B TAPG 50V 220-K
C321	61407-117-101	C-CERAMIC.AXIAL;UP050F 104Z
C322	61617-405-479	C-ELEC;CEAP 25V 4.7M RSS(4X7)
C324	61617-404-101	C-ELEC;CEAP 16V 100M RSS(6.3X7)
C325	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C326	61507-121-551	C-POLYESTER;CQ921M TAPG 50V 473-J
C340	61407-117-228	C-CERAMIC.AXIAL;CAX SL TAPG 50V 223-Z
CN301	63054-307-160	FLAT WIRE;UL2878 #26-07P 160
CN302	B6010-0254	CONNECTOR WAFER;52556-0990 WHT
D301	62169-406-482	DIODE;1N4148 SAMSUNG
D302	62169-406-482	DIODE;1N4148 SAMSUNG
D303	62169-406-482	DIODE;1N4148 SAMSUNG
IC301	A4008-0756	IC;KA8320 SIP
L301	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K
Q301	62137-701-012	TRANSISTOR;KSR 1003 TAPG
Q302	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q303	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
R301	61048-177-912	R-METAL FILM;RM 1/8TS 9.1K
R302	61048-177-304	R-METAL FILM;RM 1/8TS 300K-J
R303	61048-177-274	R-METAL FILM;RM 1/8TS 270K-J
R304	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R305	61048-177-683	R-METAL FILM;RM 1/8TS 68K-J
R306	61048-177-273	R-METAL FILM;RM 1/8TS 27K-J
R307	61048-177-105	R-METAL FILM;RM 1/8TS 1M-J
R308	61048-177-564	R-METAL FILM;RM 1/8TS 560K-J
R309	61048-177-105	R-METAL FILM;RM 1/8TS 1M-J
R310	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J
R311	61048-177-512	R-METAL FILM;RM 1/8TS 5.1K-J
R312	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R313	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R314	61048-177-752	R-METAL FILM;RM 1/8TS 7.5K-J
R315	61048-177-183	R-METAL FILM;RM 1/8TS 18K-J
R316	61048-177-124	R-METAL FILM;RM 1/8TS 120K-J
R317	61048-177-104	R-METAL FILM;RM 1/8TS 100K-J
R318	61048-177-563	R-METAL FILM;RM 1/8TS 56K-J
R319	61048-177-104	R-METAL FILM;RM 1/8TS 100K-J
R320	61048-177-684	R-METAL FILM;RM 1/8TS 680K-J
R321	61048-177-823	R-METAL FILM;RM 1/8TS 82K-J
R322	61048-177-683	R-METAL FILM;RM 1/8TS 68K-J
R323	61048-177-271	R-METAL FILM;RM 1/8TS 270-J
R324	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R325	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R326	61048-177-156	R-METAL FILM;RM 1/8TS 1.5M-J
R327	61048-177-123	R-METAL FILM;RM 1/8TS 12K-J
R328	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R329	61048-177-471	R-METAL FILM;RM 1/8TS 470-J
R330	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R331	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J
R332	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J
R333	61048-177-271	R-METAL FILM;RM 1/8TS 270-J
VR301	61247-101-224	VR-SEMI;EVN-DJA A03 BE5 TAPG 220KB
ZD301	62169-423-092	DIODE-ZENER;MTZ 6.8B/UZ 6.8BH
ZD302	62169-423-092	DIODE-ZENER;MTZ 6.8B/UZ 6.8BH

MESECAM DET. PARTS

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
C4102	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C4103	61617-404-330	C-ELEC;CEAP 16V 33M RSS(6.3X7)
C4104	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C4105	61617-404-470	C-ELEC;CEAP 16V 47M RSS(6.3X7)
C4106	61617-408-010	C-ELEC;CEAP 50V 1M RSS(4X7)
C4107	61617-404-330	C-ELEC;CEAP 16V 33M RSS(6.3X7)
C4108	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
D4101	62169-406-482	DIODE;1N4148 SAMSUNG
FL4101	A1134-0015	COIL-TRAP;7.8KHZ 23.5MH 0.018UF
FL4202	62809-006-020	COIL TUNNING;4.28 MHZ
FL4203	62809-006-030	COIL TUNNING;1.072 MHZ
FL4251	62809-006-030	COIL TUNNING;1.072 MHZ
IC4101	A4008-0035	IC;BA7025L SIP
L4101	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K
Q4101	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
R4101	61048-177-153	R-METAL FILM;RM 1/8TS 15K-J
R4103	61048-177-562	R-METAL FILM;RM 1/6TS 5.6K-J
R4104	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R4105	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R4106	61048-177-823	R-METAL FILM;RM 1/8TS 82K-J
R4107	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R4108	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J
R4109	61048-177-154	R-METAL FILM;RM 1/8TS 150K-J
R4110	61048-177-152	R-METAL FILM;RM 1/8TS 1.5K-J
R4111	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J
XT4101	64527-310-010	FILTER CERAMIC;SFE4.5MB TAPG

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
601	69602-403-202	MAIN B ASSY;REC MODEL (VK-SERIES)
	69602-403-204	MAIN B ASSY;W/O REC MODEL (PK-SERIES)

LUMA/CHROMA PARTS

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
C401	61453-131-181	C-CERAMIC CHIP;0805 5A 181JAT MA
C402	61453-131-330	C-CERAMIC.CHIP;0805 5A 330JAT MA
C403	61453-130-392	C-CERAMIC.CHIP;0805 5A 390JAT MA
C404	61453-131-821	C-CERAMIC CHIP;0805 5A 820JAT MA
C405	61627-208-010	C-ELEC;CEAP 50V 1M NP(6X11)
C406	61453-131-391	C-CERAMIC.CHIP;0805 5A 391JAT MA
C408	61454-146-050	C-CERAMIC.CHIP;0805 5A 050DAT MA
C409	61453-131-821	C-CERAMIC CHIP;0805 5A 820JAT MA
C410	61453-131-101	C-CERAMIC.CHIP;0805 5A 101JAT MA
C411	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C413	61453-131-101	C-CERAMIC.CHIP;0805 5A 101JAT MA
C414	61453-131-821	C-CERAMIC CHIP;0805 5A 820JAT MA
C415	61617-408-010	C-ELEC;CEAP 50V 1M RSS(4X7)
C416	61627-404-100	C-ELEC;CEAP 16V 10M RSS(4X7)
C417	61637-608-338	C-ELEC;CEAP 50V 0.33M SV(5X9)
C418	61454-140-223	C-CERAMIC.CHIP;08055C 223 JAT MA
C419	61507-121-511	C-POLYESTER;CQ921M TAPG 100V 223-J
C420	61454-144-103	C-CERAMIC.CHIP;1206 5C 103KAT MA
C421	61617-408-010	C-ELEC;CEAP 50V 1M RSS(4X7)
C422	61453-131-821	C-CERAMIC CHIP;0805 5A 820JAT MA
C423	61617-404-101	C-ELEC;CEAP 16V 100M RSS(6.3X7)
C424	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C425	61617-408-479	C-ELEC;CEAP 50V 4.7M RSS(4X7)
C426	61454-144-103	C-CERAMIC.CHIP;1206 5C 103KAT MA
C427	61617-408-010	C-ELEC;CEAP 50V 1M RSS(4X7)
C428	61617-408-010	C-ELEC;CEAP 50V 1M RSS(4X7)
C429	61507-121-551	C-POLYESTER;CQ921M TAPG 50V 473-J
C430	61454-140-223	C-CERAMIC.CHIP;08055C 223 JAT MA
C431	61453-131-821	C-CERAMIC CHIP;0805 5A 820JAT MA
C433	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C434	61617-408-010	C-ELEC;CEAP 50V 1M RSS(4X7)
C435	61617-408-339	C-ELEC;CEAP 50V 3.3M RSS(4X7)
C436	61507-121-511	C-POLYESTER;CQ921M TAPG 100V 223-J
C437	61507-121-551	C-POLYESTER;CQ921M TAPG 50V 473-J
C438	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)
C439	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C440	61627-404-100	C-ELEC;CEAP 16V 10M RSS(4X7)
C441	61407-105-320	C-CERAMIC.TEMP;CC45 CH TAPG 50V 82-J
C442	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C443	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C444	61617-404-101	C-ELEC;CEAP 16V 100M RSS(6.3X7)
C445	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C446	61627-404-100	C-ELEC;CEAP 16V 10M RSS(4X7)
C447	61627-404-100	C-ELEC;CEAP 16V 10M RSS(4X7)
C448	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C450	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C451	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)
C453	61453-131-821	C-CERAMIC CHIP;0805 5A 820JAT MA
C454	61617-404-101	C-ELEC;CEAP 16V 100M RSS(6.3X7)
C455	61453-131-821	C-CERAMIC CHIP;0805 5A 820JAT MA
C460	61617-404-101	C-ELEC;CEAP 16V 100M RSS(6.3X7)
C460	61454-144-103	C-CERAMIC.CHIP;1206 5C 103KAT MA
C462	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C463	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C464	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C465	61454-140-223	C-CERAMIC.CHIP;08055C 223 JAT MA
C468	61454-144-103	C-CERAMIC.CHIP;1206 5C 103KAT MA
C471	61453-130-560	C-CERAMIC.CHIP;0805 5A 560JAT MA
CN401	A6010-0363	CONNECTOR-WAFER;GC200-12P LS WHT
CN402	A6010-0363	CONNECTOR-WAFER;GC200-12P LS WHT
CN403	A6010-0264	CONNECTOR WAFER;GC200-10P-LS WHT
CN404	A6010-0264	CONNECTOR WAFER;GC200-10P-LS WHT
D401	62169-901-047	DIODE CHIP;MA111 TX TYPE
D402	62169-901-047	DIODE CHIP;MA111 TX TYPE
D404	62169-901-047	DIODE CHIP;MA111 TX TYPE
FL401	64569-006-011	DELAY LINE;MS-31PC-5K
IC401	B4008-0894	IC;LA7397 DIP
IC402	B4008-0432	IC;MSM 7403RS SIP
L401	62427-020-330	COIL PEAKING.AXIAL;LAL02TB 330J TAPG
L402	62427-812-680	COIL-PEAKING;EL0606RA 68uH-J
L403	62427-812-820	COIL-PEAKING;EL0606RA 82uH-J
L404	62427-812-339	COIL-PEAKING;EL0606RA 3.3uH-J
L405	62427-020-011	COIL PEAKING.AXIAL;LAL02TB 100J TAPG
L406	62427-812-150	COIL-PEAKING;EL0606RA 15uH-J
L408	62427-812-101	COIL-PEAKING;EL0606RA 100uH-J
L471	62427-812-220	COIL-PEAKING;EL0606RA 22uH-J
Q401	62129-101-080	TRANSISTOR.CHIP;KSA 812-G(REEL)
Q402	62129-101-080	TRANSISTOR.CHIP;KSA 812-G(REEL)
Q403	62129-101-172	TRANSISTOR.CHIP;KSC 1623G(REEL)
Q404	62129-101-172	TRANSISTOR.CHIP;KSC 1623G(REEL)
Q405	62129-101-173	TRANSISTOR.CHIP;KSR 1104(REEL)
Q406	62129-101-080	TRANSISTOR.CHIP;KSA 812-G(REEL)
Q407	62129-101-172	TRANSISTOR.CHIP;KSC 1623G(REEL)
Q408	62129-101-080	TRANSISTOR.CHIP;KSA 812-G(REEL)
Q409	62129-101-172	TRANSISTOR.CHIP;KSC 1623G(REEL)
Q410	62129-101-172	TRANSISTOR.CHIP;KSC 1623G(REEL)
Q411	62129-101-140	TRANSISTOR.CHIP;KSR 2104(REEL)
Q412	62129-101-140	TRANSISTOR.CHIP;KSR 2104(REEL)
Q413	62129-101-172	TRANSISTOR.CHIP;KSC 1623G(REEL)
Q414	62129-101-173	TRANSISTOR.CHIP;KSR 1104(REEL)
Q415	62129-101-080	TRANSISTOR.CHIP;KSA 812-G(REEL)
Q417	62129-101-080	TRANSISTOR.CHIP;KSA 812-G(REEL)
Q418	62129-101-140	TRANSISTOR.CHIP;KSR 2104(REEL)
R401	61079-917-122	R-MG.CHIP;RMC 1/10 1.2K-J
R402	61079-917-472	R-MG.CHIP;RMC 1/10 4.7K-J
R403	61079-917-222	R-MG.CHIP;RMC 1/10 2.2K-J
R404	61079-917-102	R-MG.CHIP;RMC 1/10 1K-J
R405	61079-917-222	R-MG.CHIP;RMC 1/10 2.2K-J
R406	61079-917-272	R-MG.CHIP;RMC 1/10 2.7K-J
R407	61079-917-561	R-MG.CHIP;RMC 1/10 560-J
R409	61079-917-102	R-MG.CHIP;RMC 1/10 1K-J
R410	61079-917-102	R-MG.CHIP;RMC 1/10 1K-J
R411	61079-917-222	R-MG.CHIP;RMC 1/10 2.2K-J
R412	61079-917-222	R-MG.CHIP;RMC 1/10 2.2K-J
R413	61079-917-102	R-MG.CHIP;RMC 1/10 1K-J
R414	61079-917-561	R-MG.CHIP;RMC 1/10 560-J
R415	61079-917-512	R-MG.CHIP;RMC 1/10 5.1K-J
R416	61079-917-562	R-MG.CHIP;RMC 1/10 5.6K-J
R417	61079-917-102	R-MG.CHIP;RMC 1/10 1K-J
R418	61079-917-271	R-MG.CHIP;RMC 1/10 270-J
R419	61079-917-102	R-MG.CHIP;RMC 1/10 1K-J
R420	61079-917-222	R-MG.CHIP;RMC 1/10 2.2K-J
R421	61079-917-681	R-MG.CHIP;RMC 1/10 680-J
R422	61079-917-182	R-MG.CHIP;RMC 1/10 1.8K-J
R423	61079-917-122	R-MG.CHIP;RMC 1/10 1.2K-J
R425	61079-917-105	R-MG.CHIP;RMC 1/10 1M-J
R426	61079-917-822	R-MG.CHIP;RMC 1/10 8.2K-J
R427	61079-917-152	R-MG.CHIP;RMC 1/10 1.5K-J
R428	61079-917-182	R-MG.CHIP;RMC 1/10 1.8K-J
R430	61079-917-223	R-MG.CHIP;RMC 1/10 22K-J
R431	61079-917-333	R-MG.CHIP;RMC 1/10 33K-J
R432	61079-917-122	R-MG.CHIP;RMC 1/10 1.2K-J
R433	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J
R434	61079-917-102	R-MG.CHIP;RMC 1/10 1K-J
R435	61079-917-102	R-MG.CHIP;RMC 1/10 1K-J
R436	61079-917-102	R-MG.CHIP;RMC 1/10 1K-J
R437	61079-917-223	R-MG.CHIP;RMC 1/10 22K-J
R438	61079-917-271	R-MG.CHIP;RMC 1/10 270-J
R439	61079-917-122	R-MG.CHIP;RMC 1/10 1.2K-J
R440	61079-917-222	R-MG.CHIP;RMC 1/10 2.2K-J
R441	61079-917-332	R-MG.CHIP;RMC 1/10 3.3K-J
R442	61079-917-102	R-MG.CHIP;RMC 1/10 1K-J
R443	61079-917-273	R-MG.CHIP;RMC 1/10 27K-J
R445	61079-917-103	R-MG.CHIP;RMC 1/10 10K-J
R446	61079-917-202	R-MG CHIP;RMC 1/10 2K-J
R447	61079-917-103	R-MG.CHIP;RMC 1/10 10K-J
R448	61079-917-273	R-MG.CHIP;RMC 1/10 27K-J
R451	61079-917-101	R-MG.CHIP;RMC 1/10 100-J
R454	61079-917-102	R-MG.CHIP;RMC 1/10 1K-J
R455	61079-917-102	R-MG.CHIP;RMC 1/10 1K-J
R456	61079-917-821	R-MG.CHIP;RMC 1/10W 820-J

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
R457	61079-917-750	R-MG CHIP;RMC 1/10 75-J
R461	61079-217-332	R-MG.CHIP;RMC 1/8 3.3K-J
R462	61079-217-000	R-MG.CHIP;RMC 1/8 000-J
VR401	61246-106-472	VR-SEMI;RH0614C 4.7K
VR402	61246-106-104	VR-SEMI;RH0614C 10K
VR403	61246-106-223	VR-SEMI;RH0614C 22K
VR404	61246-106-104	VR-SEMI;RH0614C 10K
XT401	64539-012-079	X-TAL;4.43 3619MHZ 8PPM TAPG

PRE-AMP PARTS

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
C801	61453-131-102	C-CERAMIC.CHIP;0805 5C 102KAT MA
C802	61617-408-010	C-ELEC;CEAP 50V 1M RSS(4X7)
C803	61453-130-104	C-CERAMIC.CHIP;0805 5E 104ZAT MA
C804	61453-130-392	C-CERAMIC.CHIP;0805 5A 390JAT MA
C805	61453-130-392	C-CERAMIC.CHIP;0805 5A 390JAT MA
C806	61453-130-104	C-CERAMIC.CHIP;0805 5E 104ZAT MA
C807	61617-408-010	C-ELEC;CEAP 50V 1M RSS(4X7)
C808	61453-130-104	C-CERAMIC.CHIP;0805 5E 104ZAT MA
C809	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C810	61617-408-010	C-ELEC;CEAP 50V 1M RSS(4X7)
C811	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C812	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C813	61617-404-470	C-ELEC;CEAP 16V 47M RSS(6.3X7)
C814	61407-117-150	C-CERAMIC.AXIAL;CAX SL TAPG 50V 15-J
C815	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C816	61453-130-392	C-CERAMIC.CHIP;0805 5A 390JAT MA
C817	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C818	61453-130-301	C-CERAMIC.CHIP;0805 5A 300JAT MA
C819	61453-131-331	C-CERAMIC.CHIP;0805 5A 331JAT MA
C820	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C821	61453-131-221	C-CERAMIC.CHIP;0805 5A 221JAT MA
C822	61453-130-151	C-CERAMIC.CHIP;0805 5A 151JAT MA
C823	61454-144-103	C-CERAMIC.CHIP;1206 5C 103KAT MA
C824	61617-404-470	C-ELEC;CEAP 16V 47M RSS(6.3X7)
C825	61454-144-103	C-CERAMIC.CHIP;1206 5C 103KAT MA
C830	61454-140-223	C-CERAMIC.CHIP;08055C 223 JAT MA
C851	61453-130-104	C-CERAMIC.CHIP;0805 5E 104ZAT MA
C852	61453-130-104	C-CERAMIC.CHIP;0805 5E 104ZAT MA
C853	61453-130-104	C-CERAMIC.CHIP;0805 5E 104ZAT MA
C854	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C855	61453-130-121	C-CERAMIC.CHIP;0805 5A 121JAT MA
C856	61453-130-392	C-CERAMIC.CHIP;0805 5A 390JAT MA
C857	61453-131-181	C-CERAMIC CHIP;0805 5A 181JAT MA
C858	61453-131-180	C-CERAMIC.CHIP;0805 5A 180JAT MA
C859	61453-131-330	C-CERAMIC.CHIP;0805 5A 330JAT MA
C861	61617-404-470	C-ELEC;CEAP 16V 47M RSS(6.3X7)
CN801	63348-231-040	CONNECTOR-WAFER;52045-0410
CN802	A6010-0261	CONNECTOR WAFER;GC200-5P-LS WHT
IC801	B4012-0107	IC-LINEAR;BA7172S DIP PRE AMP
L801	62427-020-270	COIL PEAKING.AXIAL;LAL02TB 270J TAPG
L802	62427-020-560	COIL PEAKING.AXIAL;LAL02TB 560J TAPG
L803	62427-020-220	COIL PEAKING.AXIAL;LAL02TB 220J TAPG
L804	62427-020-181	COIL PEAKING.AXIAL;LAL02TB 181J TAPG
L805	62427-812-101	COIL-PEAKING;EL0606RA 100uH-J
L806	62427-812-471	COIL-PEAKING;EL0606RA 470uH-J
L807	62427-812-331	COIL-PEAKING;EL0606RA 330uH-J
L808	62427-020-101	COIL PEAKING.AXIAL;LAL02TB 101J TAPG
L851	62427-020-221	COIL PEAKING.AXIAL;LAL02TB 221J TAPG
L852	62427-020-101	COIL PEAKING.AXIAL;LAL02TB 101J TAPG
L853	62427-020-220	COIL PEAKING.AXIAL;LAL02TB 220J TAPG
L854	62427-010-270	COIL-PEAKING.AXIAL;LAL02 TB 27UH TAPG
Q801	62129-101-172	TRANSISTOR.CHIP;KSC 1623G(REEL)
Q802	62129-101-172	TRANSISTOR.CHIP;KSC 1623G(REEL)
Q803	62129-101-172	TRANSISTOR.CHIP;KSC 1623G(REEL)
Q851	62129-101-172	TRANSISTOR.CHIP;KSC 1623G(REEL)
R801	61079-217-102	R-MG.CHIP;RMC 1/8 1K-J
R802	61079-917-511	R-MG.CHIP;RMC 1/10 510-J
R803	61079-917-511	R-MG.CHIP;RMC 1/10 510-J
R804	61079-917-121	R-MG.CHIP;RMC 1/10 120-J
R805	61079-217-102	R-MG.CHIP;RMC 1/8 1K-J
R806	61079-917-222	R-MG.CHIP;RMC 1/10 2.2K-J
R807	61079-917-222	R-MG.CHIP;RMC 1/10 2.2K-J
R808	61079-917-391	R-MG.CHIP;RMC 1/10 390-J
R809	61079-917-391	R-MG.CHIP;RMC 1/10 390-J
R810	61079-917-202	R-MG CHIP;RMC 1/10 2K-J
R811	61079-917-562	R-MG.CHIP;RMC 1/10 5.6K-J
R812	61079-917-222	R-MG.CHIP;RMC 1/10 2.2K-J
R813	61079-917-122	R-MG.CHIP;RMC 1/10 1.2K-J
R814	61079-917-102	R-MG.CHIP;RMC 1/10 1K-J
R815	61079-917-122	R-MG.CHIP;RMC 1/10 1.2K-J
R816	61079-917-102	R-MG.CHIP;RMC 1/10 1K-J
R817	61079-917-102	R-MG.CHIP;RMC 1/10 1K-J
R818	61079-917-152	R-MG.CHIP;RMC 1/10 1.5K-J
R819	61079-917-102	R-MG.CHIP;RMC 1/10 1K-J
R851	61079-917-392	R-MG.CHIP;RMC 1/10 3.9K-J
R852	61079-217-222	R-MG.CHIP;RMC 1/8 2.2K-J
R853	61079-217-121	R-MG.CHIP;RMC 1/8 120-J
R854	61079-917-152	R-MG.CHIP;RMC 1/10 1.5K-J
R855	61079-917-332	R-MG.CHIP;RMC 1/10 3.3K-J
R856	61079-917-222	R-MG.CHIP;RMC 1/10 2.2K-J
R857	61079-917-911	R-MG CHIP;RMC 1/10 910-J
R858	61079-917-271	R-MG.CHIP;RMC 1/10 270-J
R859	61079-917-102	R-MG.CHIP;RMC 1/10 1K-J
R860	61079-217-271	R-MG.CHIP;RMC 1/8 270-J

AUDIO PARTS

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
C501	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)
C502	61637-504-101	C-ELEC;CEAP 16V 100M SG(6.3X11)
C503	61627-404-100	C-ELEC;CEAP 16V 10M RSS(4X7)
C504	61507-121-451	C-POLYESTER;CQ921M TAPG 100V 682-J
C505	61507-121-431	C-POLYESTER;CQ921M TAPG 50V 472-J
C506	61507-121-440	C-POLYESTER;CQ921M TAPG 100V 562-K
C507	61627-404-100	C-ELEC;CEAP 16V 10M RSS(4X7)
C508	61507-121-471	C-POLYESTER;CQ921M TAPG 50V 103-J
C509	61627-404-100	C-ELEC;CEAP 16V 10M RSS(4X7)
C510	61617-408-478	C-ELEC;CEAP 50V 0.47M RSS(4X7)
C511	61507-121-251	C-POLYESTER;CQ921M TAPG 100V 272-J
C512	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C521	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C551	61627-404-100	C-ELEC;CEAP 16V 10M RSS(4X7)
C552	61617-408-010	C-ELEC;CEAP 50V 1M RSS(4X7)
C553	61507-121-471	C-POLYESTER;CQ921M TAPG 50V 103-J
C554	61637-204-330	C-ELEC;CEAP 16V 33M SA(5X11)
C555	61507-121-451	C-POLYESTER;CQ921M TAPG 100V 682-J
C556	61507-121-431	C-POLYESTER;CQ921M TAPG 50V 472-J
C557	61507-121-610	C-POLYESTER;CQ921M TAPG 100V 123-J
C558	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)
C559	61507-339-010	C-POLYESTER;MDX 100V TAPG 473-K
C560	61407-101-440	C-CERAMIC.TEMP;CC45 SL TAPG 50V 220-J
C561	61627-404-100	C-ELEC;CEAP 16V 10M RSS(4X7)
C562	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
CN501	63053-916-421	LEAD CONNECTOR ASSY;1429 1061 #26
FL551	62429-014-138	COIL-BIAS OSC;269QN-K5022YCT
IC501	62119-103-653	IC;LA7297
L501	62427-812-101	COIL-PEAKING;EL0606RA 100uH-J
L502	62429-010-260	COIL-PEAKING;BOAM-22mH
L551	62427-813-153	COIL-PEAKING;EL0607RA 15mH-J
L552	62427-020-101	COIL PEAKING.AXIAL;LAL02TB 101J TAPG
Q551	62137-702-020	TRANSISTOR;KSC 1008-Y TAPG
R501	61079-917-152	R-MG.CHIP;RMC 1/10 1.5K-J
R502	61079-917-123	R-MG.CHIP;RMC 1/10 12K-J
R503	61079-917-122	R-MG.CHIP;RMC 1/10 1.2K-J
R504	61079-917-681	R-MG.CHIP;RMC 1/10 680-J
R505	61079-917-182	R-MG.CHIP;RMC 1/10 1.8K-J
R506	61079-917-101	R-MG.CHIP;RMC 1/10 100-J
R507	61079-917-822	R-MG.CHIP;RMC 1/10 8.2K-J
R508	61079-917-334	R-MG.CHIP;RMC 1/10 330K-J
R509	61079-917-221	R-MG.CHIP;RMC 1/10 220-J
R510	61079-917-393	R-MG.CHIP;RMC 1/10 39K-J
R551	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R552	61079-917-273	R-MG.CHIP;RMC 1/10 27K-J
R553	61079-917-331	R-MG.CHIP;RMC 1/10 330-J
R554	61079-917-363	R-MG.CHIP;RMC 1/10 36K-J
R555	61079-917-183	R-MG.CHIP;RMC 1/10 18K-J
R556	61079-917-105	R-MG.CHIP;RMC 1/10 1M-J
R557	61079-917-363	R-MG.CHIP;RMC 1/10 36K-J
R558	61079-917-332	R-MG.CHIP;RMC 1/10 3.3K-J
R559	61079-917-304	R-MG CHIP;RMC 1/10 30K-J
R560	61079-917-478	R-MG.CHIP;RMC 1/10 4.7-J
VR551	61246-106-105	VR-SEMI;RH0614C 100K

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602	69604-403-201	SUB ASSY;SECAM BOARD
C4201	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)
C4202	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C4203	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C4204	61507-121-227	C-POLYESTER;CQ921M TAPG 50V 222-J
C4205	61407-101-360	C-CERAMIC.TEMP;CC45 SL TAPG 50V 100-J
C4206	61507-121-350	C-POLTESTER;CQ921M TAPG 100V 122-K
C4207	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C4208	61407-101-460	C-CERAMIC.TEMP;CC45 SL TAPG 50V 270-J
C4209	A1102-0148	C-FILM;CF 922 P 100V T 104-J /C-M 365 26104/3E
C4210	61407-105-300	C-CERAMIC.TEMP;CC45 CH TAPG 50V 68-J
C4211	61407-101-360	C-CERAMIC.TEMP;CC45 SL TAPG 50V 100-J
C4212	61407-105-320	C-CERAMIC.TEMP;CC45 CH TAPG 50V 82-J
C4213	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C4214	61617-404-330	C-ELEC;CEAP 16V 33M RSS(6.3X7)
C4215	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C4216	61617-404-330	C-ELEC;CEAP 16V 33M RSS(6.3X7)
C4217	61617-408-010	C-ELEC;CEAP 50V 1M RSS(4X7)
C4218	61617-404-470	C-ELEC;CEAP 16V 47M RSS(6.3X7)
C4219	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C4220	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C4221	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C4222	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C4223	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)
C4224	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C4225	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C4226	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C4227	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C4249	61407-117-102	C-CERAMIC.AXIAL;CAX B TAPG 102-K
C4251	61407-117-103	C-CERAMIC.AXIAL;CAX B TAPG 100-K
C4253	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C4254	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C4255	61407-105-280	C-CERAMIC.TEMP;CC45 CH TAPG 50V 56-J
CN4201	A6010-0365	CONNECTOR-WAFER;GC200-15P LS WHT
CN4202	A6010-0363	CONNECTOR-WAFER;GC200-12P LS WHT
D4201	62169-406-482	DIODE;1N4148 SAMSUNG
D4251	62169-406-482	DIODE;1N4148 SAMSUNG
FL4201	62429-038-014	FILTER LC;4.3 mHZ BPF
FL4204	62429-038-014	FILTER LC;4.3 mHZ BPF
FL4205	62429-038-015	FILTER LC;1.1 mHZ BPF
FL4206	A1134-0015	COIL-TRAP;7.8KHZ 23.5MH 0.018UF
IC4201	62119-103-689	IC;BA7107S
IC4202	A4008-0035	IC;BA7025L SIP
L4201	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K
L4202	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K
L4203	62427-020-470	COIL PEAKING.AXIAL;LAL02TB 470J TAPG
L4204	62427-812-221	COIL-PEAKING;EL0606RA 220uH-J
L4205	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K
Q4202	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q4203	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q4204	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q4251	62137-103-380	TRANSISTOR;KSA 733-Y TAPG
Q4252	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q4253	62137-701-023	TRANSISTOR;KSR 2004 TAPG
Q4254	62137-103-380	TRANSISTOR;KSA 733-Y TAPG
Q4255	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q4256	62137-701-023	TRANSISTOR;KSR 2004 TAPG
R4201	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R4202	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R4203	61048-177-393	R-METAL FILM;RM 1/8TS 39K-J
R4204	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R4205	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J
R4206	61048-177-105	R-METAL FILM;RM 1/8TS 1M-J
R4207	61048-177-331	R-METAL FILM;RM 1/8TS 330-J
R4208	61048-177-360	R-METAL FILM;RM 1/8TS 36-J
R4209	61048-177-152	R-METAL FILM;RM 1/8TS 1.5K-J
R4210	61048-177-153	R-METAL FILM;RM 1/8TS 15K-J
R4211	61048-177-562	R-METAL FILM;RM 1/8TS 5.6K-J
R4212	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R4214	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R4215	61048-177-823	R-METAL FILM;RM 1/8TS 82K-J
R4216	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J
R4217	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J
R4218	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R4219	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J
R4220	61048-177-154	R-METAL FILM;RM 1/8TS 150K-J
R4221	61048-177-153	R-METAL FILM;RM 1/8TS 15K-J
R4222	61048-177-273	R-METAL FILM;RM 1/8TS 27K-J
R4223	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R4224	61048-177-123	R-METAL FILM;RM 1/8TS 12K-J
R4225	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R4226	61048-177-122	R-METAL FILM;RM 1/8TS 1.2K-J
R4227	61048-177-181	R-METAL FILM;RM 1/8TS 180-J
R4228	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R4229	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R4230	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R4231	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R4232	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R4233	61048-177-680	R-METAL FILM;RM 1/8TS 68-J
R4234	61048-177-152	R-METAL FILM;RM 1/8TS 1.5K-J
R4235	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J
R4251	61048-177-681	R-METAL FILM;RM 1/8TS 680-J
R4252	61048-177-302	R-METAL FILM;RM 1/8TS 3K-J
R4253	61048-177-361	R-METAL FILM;RM 1/8TS 360-J
R4254	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J
R4255	61048-177-123	R-METAL FILM;RM 1/8TS 12K-J
R4256	61048-177-122	R-METAL FILM;RM 1/8TS 1.2K-J
R4257	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J
R4258	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J
R4259	61048-177-272	R-METAL FILM;RM 1/8TS 2.7K-J
R4260	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J
R4261	61048-177-393	R-METAL FILM;RM 1/8TS 39K-J
VR4201	61246-106-223	VR-SEMI;RH0614C 22K
XT4201	64527-310-010	FILTER CERAMIC;SFE4.5MB TAPG

6. MECHANICAL EXPLODED VIEW/ PARTS LIST

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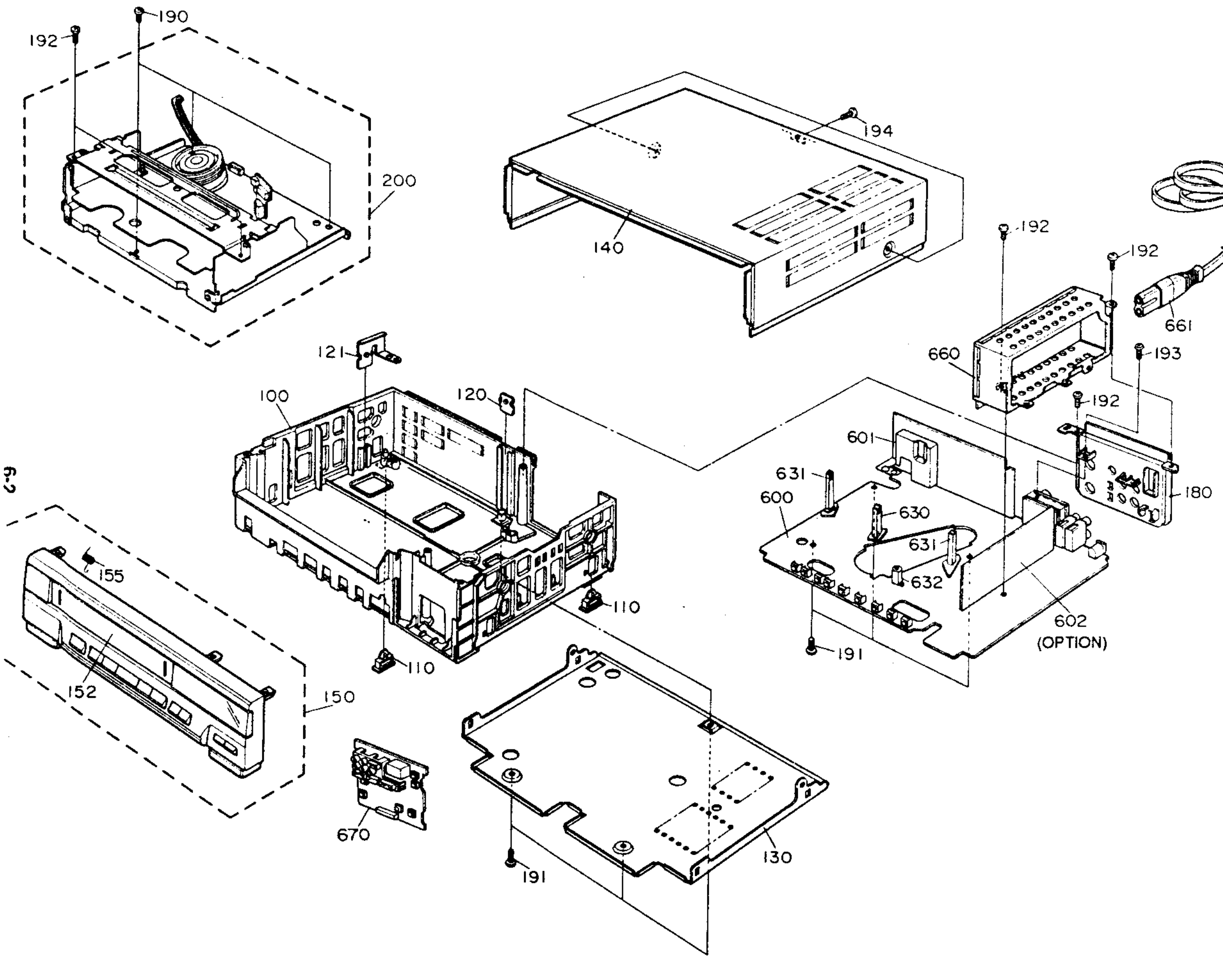
6-3. Mechanical Parts (2) ; Bottom View ------ 6-6

6-4. Housing Assembly ------------------- 6-8

6-1. Instrument Assembly



LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
100	62210-0039-00	FRAME;HIPS T2.3 BLK PK-30LR
110	66074-601-410	LEG;VT-1260 TPE(BLK)7705
120	66614-714-310	BRKT-GUIDE TOP S;SPG T1.0
121	62654-0009-00	GROUND-PLATE;SPG T0.8
130	63312-0036-00	COVER-BOTTOM;SECC C20 T0.4
140	62002-0012-00	CABINET-TOP;PVC STEEL T0.65
150		ASSY PANEL FRONT;ABS94HB

REC MODEL (VK-SERIES)			W/O REC MODEL (PK-SERIES)		
MODEL	BUYER	PART-NUMBER	MODEL	BUYER	PART-NUMBER
VK-30R	APS	69000-217-001	PK-30R	GOU	69000-217-005
	BHA	69000-217-001		JUMA	69000-217-005
	NEPX	69000-217-001		LUT	69000-217-011
	SIM	69000-217-001		MAR	69000-217-005
VK-32R	SEH	69000-219-007		OPT	69000-217-005
				SEG	69000-217-005
				SEH	69000-217-005
				SEUK	69000-217-005
				LUK	69000-217-005
				UREF	69000-217-005
			PK-31R	CHO	69000-218-013

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
152		DOOR-HOUSING;ACRYL T2.3

	PART - NUMBER
REC MODEL (VK-SERIES)	64043-0056-00
W/O REC MODEL (PK-SERIES)	64043-0056-05

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
155	66674-638-210	SPRING DOOR;SWPB 0.45
180		CONNECTOR-BOARD ASSY;HIPS94HB

	PART - NUMBER
REC MODEL (VK-SERIES)	69091-401-201
W/O REC MODEL (PK-SERIES)	66009-0025-00

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
190	67158-240-121	SCREW BH;2-4*12 FE FZY
191	67158-230-120	SCREW-TAP TITE BH;3X10 FE FZY
192	60504-0040-00	SCREW-TAP TITE;BH + TB 3 L12 SWRCH18A ZPC3
193	60509-0058-00	SCREW-MACHINE;BH FP M3 L4 SWRCH10A YEL
194	A0102-0033	SCREW-TAP TITE;BH TB 4 10 SWRCH18A ZPC3
200	DX3W-RPB	FULL DECK ASSY;WINNER L-REC PB DECK
600		MAIN A ASSY;PAL/MESECAM/SECAM

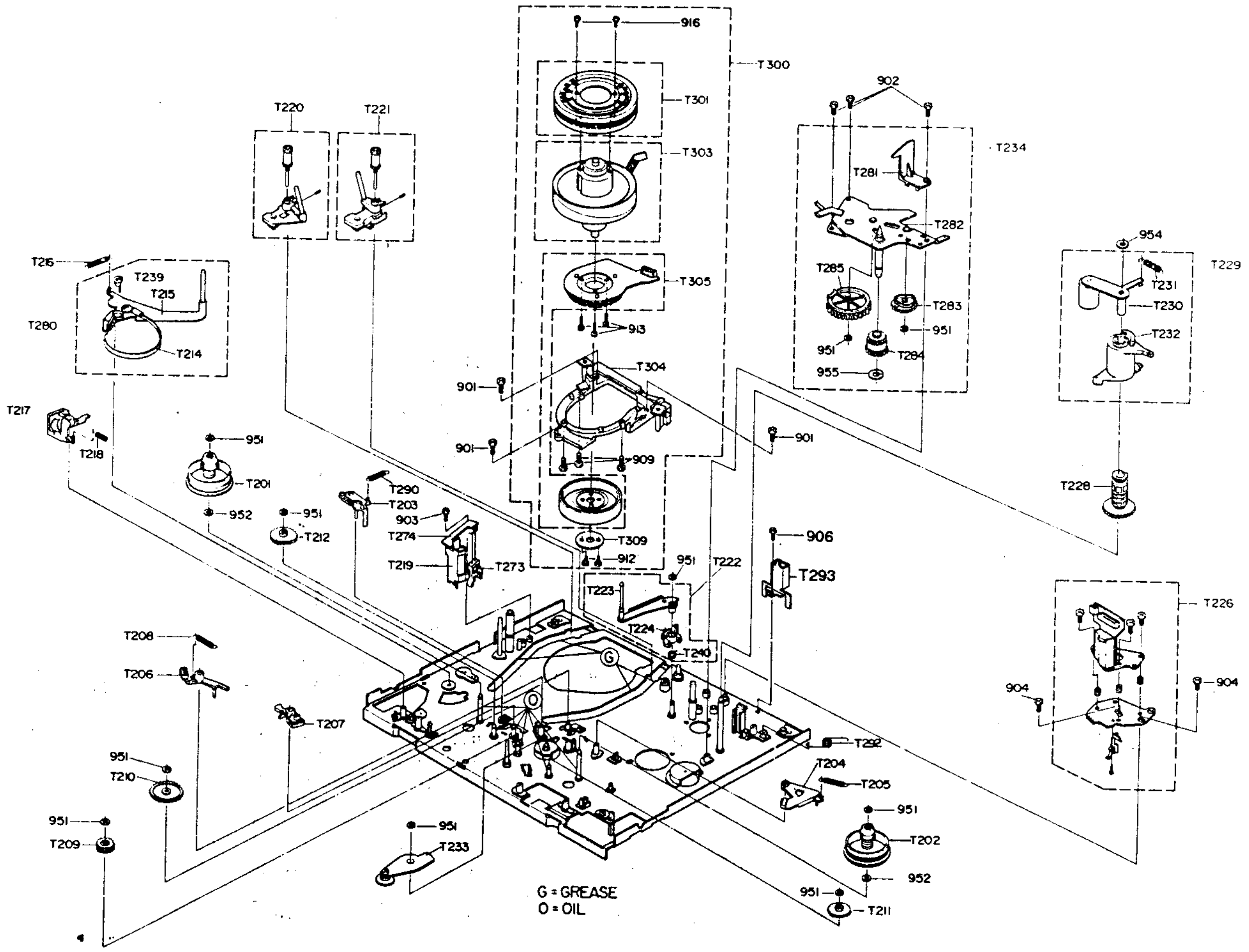
	PART - NUMBER
REC MODEL (VK-SERIES)	69657-403-210
W/O REC MODEL (PK-SERIES)	69657-403-209

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
601		MAIN B ASSY

	PART - NUMBER
REC MODEL (VK-SERIES)	69602-403-202
W/O REC MODEL (PK-SERIES)	69602-403-204

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
602	69604-403-201	SUB ASSY;SECAM BOARD
630	63323-0059-00	HOLDER LED;POM M90-44 H37.6 BLK
631	63323-0061-00	HOLDER TR;POM M90-44 H37.2 BLK
632	63323-0060-00	HOLDER PHOTO INTER;POM M90-44 H14.1 WHT
660	69097-420-810	REGULATOR ASSY;P-6 100-240V AC INLET(PAL)
661	A6006-0135	POWER CORD ASSY;KLCE-2F PLUG TYPE CP2
670	69672-403-201	FUNCTION ASSY;VK/PK-30R 32R
	69672-403-202	FUNCTION ASSY;VK/PK-31R

6-2. Mechanical Parts (1) ; Top View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T300
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T224
T240
T226
904
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T208
T206
T207
951
T210
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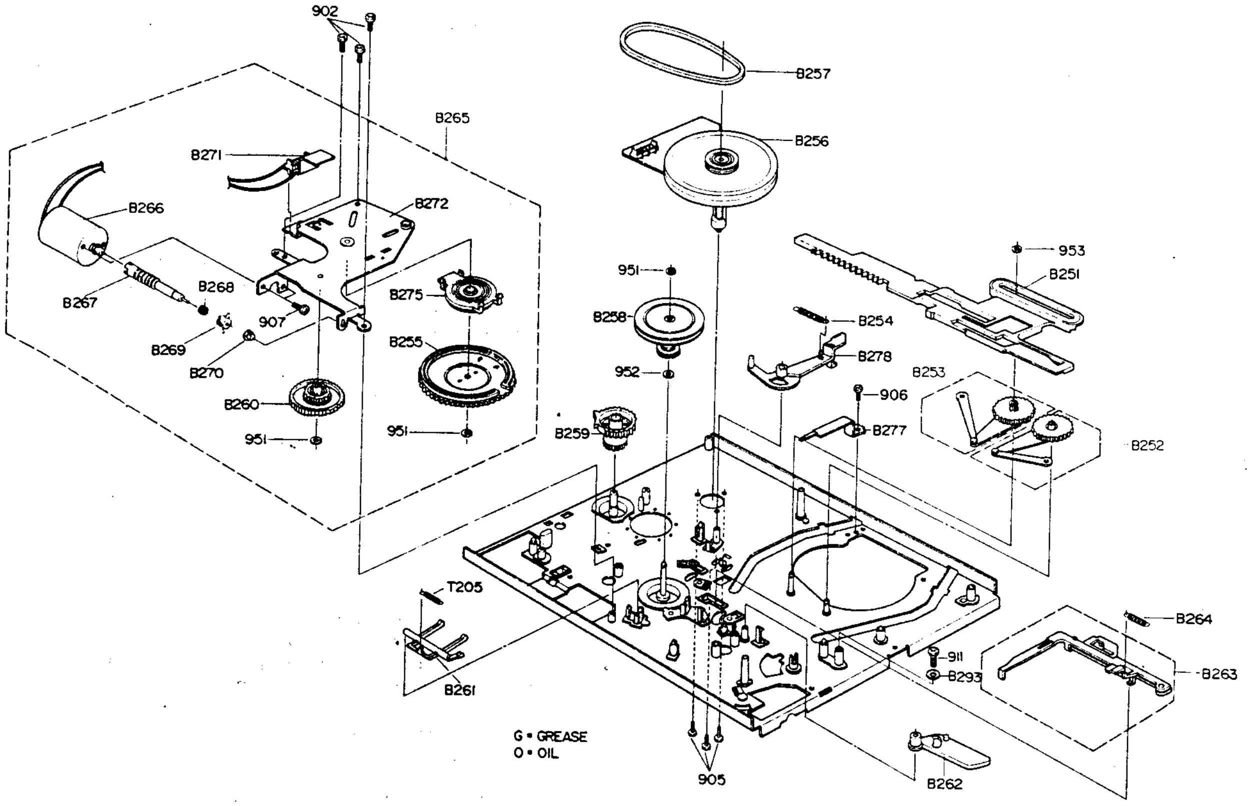
T209
951
T233
T292
T204
T205
951
T202
952
951
T211
G = GREASE
O = OIL

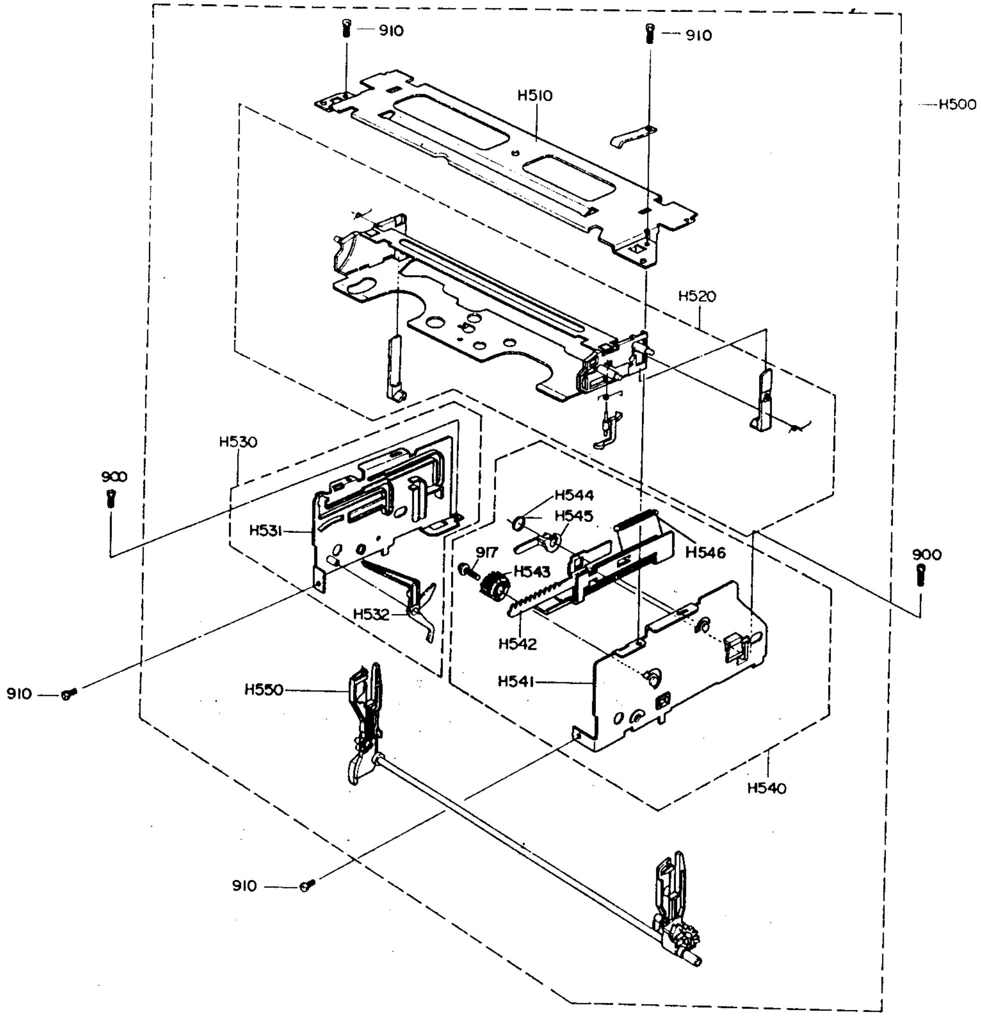
LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
901	60509-0064-00	SCREW-MACHINE;BH FP M3 L8 FE FZY
902	60509-0063-00	SCREW-TAPPING;BH B M3 L8 FE FZY
903	60504-0032-00	SCREW-PH;PH + 3 2.6 L10 SUM ZN YEL
904	60509-0059-00	SCREW-MACHINE;BH FP M2.6 L6 FE FZY
906	60509-0058-00	SCREW-MACHINE;BH FP M3 L4 SWRCH10A YEL
909	67008-126-081	SCREW-PH;+M2.6X8 FE FZY
912	67094-604-710	SCREW-DAMPER;M2.0X7.0 SWCM 10(MFZN2-C)
913	67008-123-101	SCREW-PH;+M2.3X10 FE FZY
916	67004-126-086	SCREW-BH;+M2.6X8 WSZN/70391398
951	67334-600-310	WASHER SLIT;PI2.5XPI5XT0.5
952	67304-103-410	WASHER-PLAIN;3.2X6X0.5 POLYSLIDER
954	60534-0024-00	WASHER-SLIT;ID3 OD8 T0.5 POLYSLIDE
955	60534-0019-00	WASHER-SLIT;A ID5 OD9 T0.5 POLYSLIDE
T201	61574-0010-01	REEL DISK(L) ASSY;X3RL03032A
T202	61574-0012-01	REEL DISK(R) ASSY;X3RL 03031A
T203	66603-620-110	BRAKE SUB L;POM(M90-44) NAT
T204	62614-0004-01	BRAKE SUB(R) ASSY;X3RL02021A
T205	66674-652-610	S/P BRAKE SUB "R";SUS304 WPB
T206	62614-0003-01	BRAKE MAIN(L) ASSY;X3RL02022A
T207	62614-0002-01	BRAKE MAIN(R) ASSY;X3RL02021A
T208	66674-652-510	S/P BRAKE MAIN;SUS304 WPB
T209	61474-0061-01	GEAR RELAY S1;PEBAX #6333
T210	61474-0062-01	GEAR RELAY S2;POM(M90-44) NAT
T211	61474-0060-01	GEAR RELAY T;PEBAX #6333
T212	61474-0063-01	GEAR RELAY S3;PEBAX #6333
T214	62024-0005-01	BAND TENSION ASSY;X3RL04051A
T215	69000-290-570	ARM-TENSION ASSY;SECC+SUS
T216	66674-652-910	SPRING TENSION;SUS304
T217	61533-0064-00	LEVER REC S/W;POM M90-44 H12.1 NAT
T218	62724-0075-00	S/P RECORD S/W;SUS304
T219	64079-700-454	HEAD MAGNETIC F/E;VTR-1X2ERS11-089(X-1)
T220	69000-291-035	ASSY-P.B & G.R(L);X-3
T221	69000-291-036	ASSY-P.B & G.R(R);X-3
T222	69000-291-004	FULL REVIEW ARM ASSY;X-3
T223	61544-0032-00	REVIEW ARM ASSY;SECC+SUS303C+C3604BD
T224	61473-0059-01	GEAR REVIEW;POM(M90-44) NAT
T226	69000-291-032	A/C HEAD ASSY;X-3(WINNER)
T228	61472-0054-01	GEAR ESCALATOR;POM(M90-44)
T229	61523-0021-01	PINCH ROLLER UNIT;X-3A
T230	61543-0040-01	ARM PINCH ASSY;SECC 1.6+SUS+C3604BD
T231	62724-0062-01	S/P PINCH ROLLER;SUS304-WPB
T232	63323-0043-01	HOLDER ESCALATOR;PC 30%
T233	61604-0003-01	IDLER SUB ASSY;X3RL 06061A
T234	67179-0069-01	UNIT-DRIVE PINCH;X-3
T239	66654-617-810	CAM TENSION;POM(M90-44) WHT
T240	62724-0117-00	SPRING-REVIEW;CS STS304/WPB PI0.45 D5 L5.5
T273	B6010-0248	CONNECTOR-WAFER;TMC-E02P-D1 BLK
T274	66029-0296-00	P.C.B F/E HEAD;1V0 T1.6 W29 L180 VT-350R
T280	69000-290-560	ASSY FULL ARM TENSION;SECC+SUS+POM+FELT
T281	63073-0015-00	SUPPORTER-LID OPENNER;POM(M90-44) T2 X-3
T282	63012-0098-00	BRKT PINCH DRIVE;SECC T1.0
T283	61473-0058-01	GEAR CAM PINCH;POM(OL-10)
T284	61473-0056-01	GEAR RELAY PINCH;PBT #2002
T285	61473-0057-01	GEAR CAM DRIVE;POM(OL-10)
T290	62724-0101-00	S/P BRAKE SUB
T292	62724-0082-01	S/P ESCALATOR;SUS304-WPB
T293	67223-600-220	HOLDER TR ASSY;A1050P+SUS 301CSP
T300	69020-123-004	CYLINDER ASSY;CX3-S2P
T301	69000-390-012	ASSY-UPPER CYLINDER;CX1S2P
T303	69000-400-012	LOWER CYLINDER ASSY;CX3-S2N
T304	62201-0051-00	CYLINDER BASE;ADC12
T305	66823-0020-00	MOTOR CYLINDER;DMVDMT 04B
T309	66124-601-710	RETAINER-RUBBER ASSY;SECC+SILICONE

6-3. Mechanical Parts (2) ; Bottom View


902
B257
B265
B256
B271
B266
B272
B268
B267
B275
907
B269
B255
B270
B260
951
951
951
B258
952
B259
B254
B278
953
B251
B253
906
B277
B252
T205
B261
B264
911
B293
B263
G = GREASE
O = OIL
905
B262

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
902	60509-0063-00	SCREW-TAPPING;BH B M3 L8 FE FZY
905	60504-0044-00	SCREW-TAPPING;BH + 3 M2.6 L7.5 SWRCH18A ZPC3 YEL
906	60509-0058-00	SCREW-MACHINE;BH FP M3 L4 SWRCH10A
911	60504-0041-00	SCREW-TAPPING;BH 3 M2.6 L6 SWRCH18A YEL
951	67334-600-310	WASHER SLIT;PI2.5XPI5XT0.5
952	67304-103-410	WASHER-PLAIN;3.2X6X0.5 POLYSLIDER
953	67334-601-830	SLIT WASHER;2.5X9X0.5(RED)
B251	66602-603-510	SLIDE MAIN;PBT 6300T(NAT)
B252	61473-0047-01	GEAR LOADING "L" ASS'Y;X-3
B253	61473-0045-01	GEAR LODAING "R" ASS'Y;X-3
B254	66674-652-810	S/P BRAKE CAPSTAN;SUS304 WPB
B255	61472-0055-02	GEAR MASTER;POM(M90-44)
B256	66829-0024-02	MOTOR-D/D CAPSTAN;F2QKB 39 12V DX3W
B257	65274-603-910	BELT CAPSTAN;CY-65
B258	61453-0001-01	CLUTCH ASSY;X3RL10101A
B259	61473-0051-01	GEAR E/J DRIVE;KOPER(KN333G30)
B260	61473-0053-02	GEAR WORM WHEEL;NYLON 12
B261	66603-619-510	LEVER SHIFT;POM(M90-44)
B262	61534-0040-01	LEVER TENSION CONTROL;POM(M90-44) NAT
B263	61643-0016-01	SLIDE I.B ASSY;X3RL02021A
B264	62724-0129-00	SPRING-RELEASE BRAKE;SUS304 WPB
B265	67179-0068-00	L/D UNIT ASSY;X-3W
B266	69000-291-055	LOAD MOTOR SEMI ASSY;MOTOR+POM
B267	69000-291-056	WORM LOADING ASSY;POM+SUS
B268	62724-0061-01	S/P CLUTCH;SUS304-WPB
B269	61504-0006-01	PULLEY RELEASE;POM(M90-44)
B270	63324-0042-01	HOLDER SHAFT;POM(M90-44)
B271	69000-291-054	CON. WAFER ASSY;WAFER+FPC+LEAD WIRE
B272	63011-0097-00	BRKT LOADING;SECC E20/20(T1.2)
B275	66203-0007-02	PROGRAM S/W;SMRS30A(K-ALPS)
B277	63374-0002-00	HEAD BRUSH ASSY;SECC+CARBON
B278	62614-0005-01	BRAKE DD CAP ASSY;X3RL02021A
B293	67304-600-010	WASHER-PLAIN;SPG
T205	66674-652-610	S/P BRAKE SUB "R";SUS304 WPB

6-4. Housing Assembly



LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
900	60509-0061-00	SCREW-MACHINE;BH FP M3 L6 FE FZY
910	60509-0062-00	SCREW-TAP TITE;BH + TS M3 L6 FE FZY
917	67154-101-420	SCREW-TAP PWH;2S-3X8 FE FZY
H500	62052-0004-00	F/L HOUSING ASSY;X-3 FL28300A
H510	62202-0029-00	CHASSIS-UPPER;SECC E20/20 T1.2
H520	63322-0044-00	HOLDER-CASS ASSY;X3FL11120A
H530	62203-0027-00	CHASSIS SIDE "L"ASS'Y;X3FL02020A
H531	62203-0028-00	CHASSIS SIDE "L" OUTSERT;SECC T1.2+LUCEL/KEPITAL
H532	61533-0043-00	LEVER DOOR;LUCEL-N109-LD/KEPITAL F20-03
H540	62203-0025-00	CHASSIS SIDE "R" ASS'Y;X3FL08080A
H541	62203-0026-00	CHASSIS SIDE "R" OUTSERT;SECC T1.2+LUCEL/KEPITAL
H542	61474-0080-00	GEAR RACK ASSY;SECC T1.6+SWPB
H543	61473-0064-00	GEAR-JOINT;LUCEL MR-320/KT-20
H544	62724-0067-00	SPRING LEVER DAMPER;SUS304 WPB
H545	61533-0042-00	LEVER DAMPER;LUCEL N109-LD/KEPITAL F20-03
H546	62724-0112-00	SPRING-GEAR RACK;ES SWPB PI0.5 D3.5
H550	61043-0025-00	SHAFT ARM ASSY;X3FL05050A

7. BLOCK DIAGRAMS

Page

7-1. Total Wiring Diagram ---------------- 7-2

7-2. Cylinder Phase Control -------------- 7-3

7-3. Cylinder Speed Control -------------- 7-3

7-4. Capstan Phase Control -------------- 7-4

7-5. Capstan Speed Control -------------- 7-4

7-6. Audio Playback Process ------------- 7-5

7-7. Audio Record Process -------------- 7-5

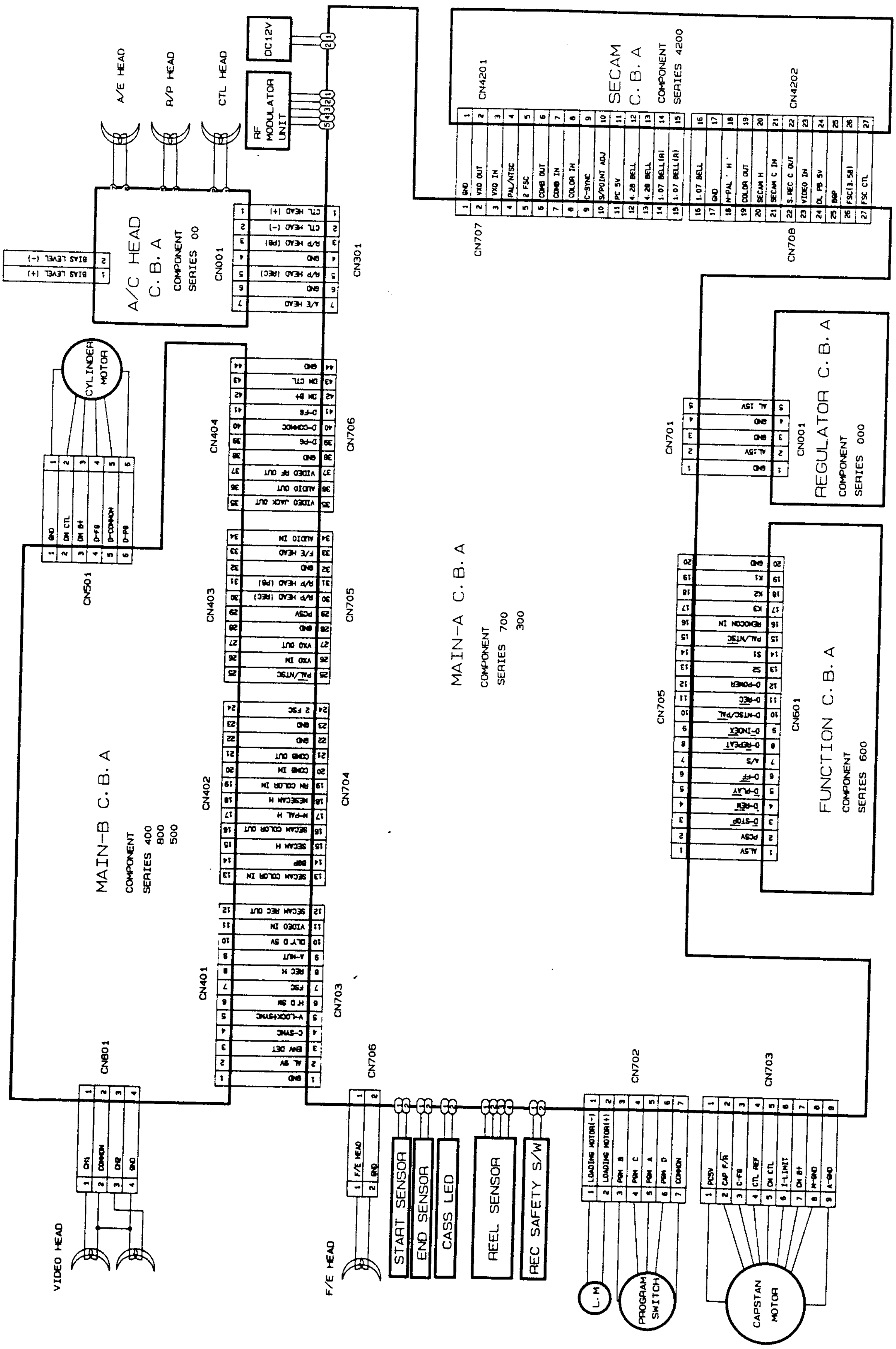
7-8. Luminance Playback Process --------- 7-6

7-9. Luminance Record Process ---------- 7-7

7-10. PAL Chrominance Playback Process --- 7-8

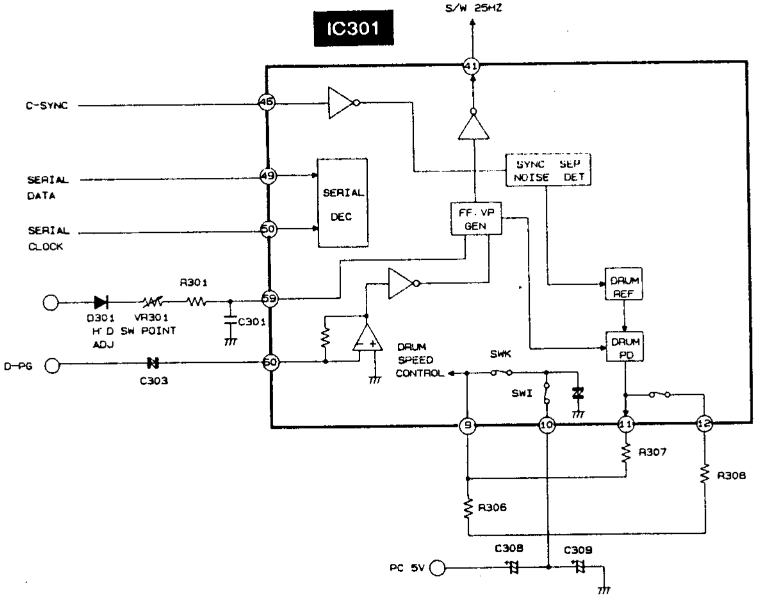
7-11. PAL Chrominance Record Process ----- 7-9

7-1. Total Wiring Diagram

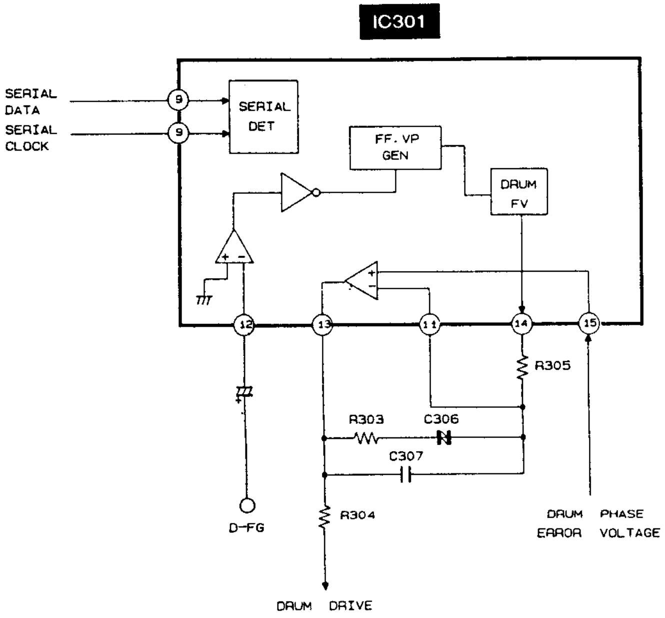


A/E HEAD
R/P HEAD
CTL HEAD
DC12V
RF MODULATOR UNIT
A/C HEAD C. B. A COMPONENT SERIES 00
CN001
BIAS LEVEL (+)
BIAS LEVEL (-)
CTL HEAD (+)
CTL HEAD (-)
R/P HEAD (PB)
GND
R/P HEAD (REC)
GND
A/E HEAD
CN301
SECAM C. B. A COMPONENT SERIES 4200
CN4201
CN4202
CN707
CN708
GND
VXO OUT
VXO IN
PAL/NTSC
2 FSC
COMB OUT
COMB IN
COLOR IN
C-SYNC
S/POINT ADJ
PC 5V
4.28 BELL
4.28 BELL
1.07 BELL(R)
1.07 BELL(R)
1.07 BELL
GND
H-PAL 'H'
COLOR OUT
SECAM H
SECAM C IN
S.REC C OUT
VIDEO IN
DL PB 5V
BGP
FSC(3.58)
FSC CTL
CYLINDER MOTOR
CN501
GND
DM CTL
DM B+
D-FG
D-COMMON
D-PG
CN404
CN706
GND
DM CTL
DM B+
D-FG
D-COMMON
D-PG
GND
VIDEO RF OUT
AUDIO OUT
VIDEO JACK OUT
CN403
CN705
AUDIO IN
F/E HEAD
GND
R/P HEAD (PB)
R/P HEAD (REC)
PC5V
GND
VXO OUT
VXO IN
PAL/NTSC
CN402
CN704
2 FSC
GND
GND
COMB OUT
COMB IN
RN COLOR IN
MESECAM H
N-PAL H
SECAM COLOR OUT
SECAM H
BGP
SECAM COLOR IN
CN401
CN703
SECAM REC OUT
VIDEO IN
DLY D 5V
A-MUT
REC H
FSC
H D SW
V-LOCK+SYNC
C-SYNC
BWA DET
AL 5V
GND
MAIN-B C. B. A COMPONENT SERIES 400 800 500
MAIN-A C. B. A COMPONENT SERIES 700 300
CN801
CH1
COMMON
CH2
GND
VIDEO HEAD
CN701
AL 15V
GND
GND
AL15V
GND
REGULATOR C. B. A COMPONENT SERIES 000
CN001
CN705
CN601
FUNCTION C. B. A COMPONENT SERIES 600
GND
K1
K2
K3
REMOCON IN
PAL/NTSC
S1
S2
O-POWER
O-REC
O-NTSC/PAL
O-INDEX
O-REPEAT
A/S
O-FF
O-PLAY
O-REW
O-STOP
PC5V
AL5V
CN706
F/E HEAD
GND
F/E HEAD
START SENSOR
END SENSOR
CASS LED
REEL SENSOR
REC SAFETY S/W
CN702
LOADING MOTOR(-)
LOADING MOTOR(+)
PGM B
PGM C
PGM A
PGM D
COMMON
L.M
PROGRAM SWITCH
CN703
PC5V
CAP F/R
C-FG
CTL REF
CM CTL
I-LIMIT
CM B+
H-GND
A-GND
CAPSTAN MOTOR

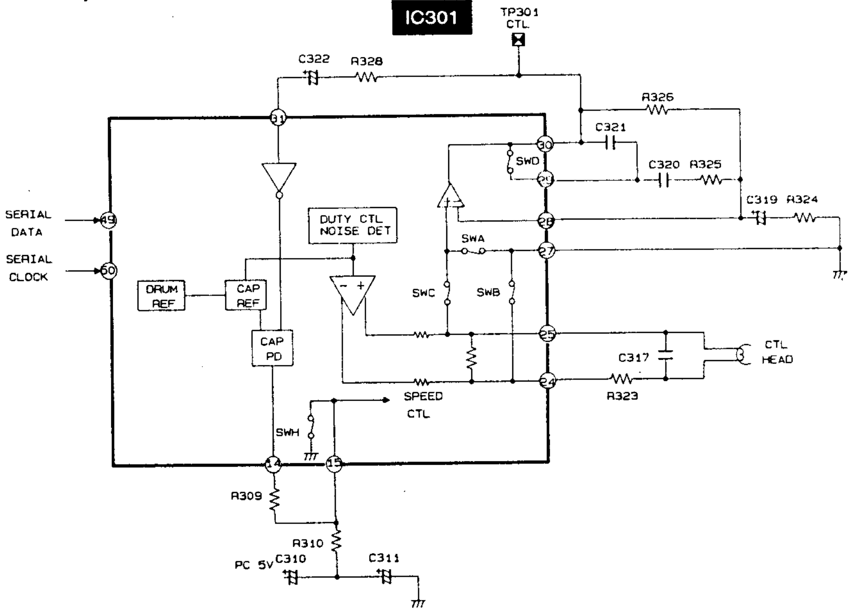
7-2. Cylinder Phase Control


IC301
S/W 25HZ
C-SYNC
SERIAL DATA
SERIAL CLOCK
SERIAL DEC
SYNC SEP NOISE DET
FF. VP GEN
DRUM REF
DRUM PD
R301
D301
VR301
H' D SW POINT ADJ
C301
D-PG
C303
DRUM SPEED CONTROL
SWK
SWI
R307
R308
R306
PC 5V
C308
C309
41
45
49
50
59
60
9
10
11
12

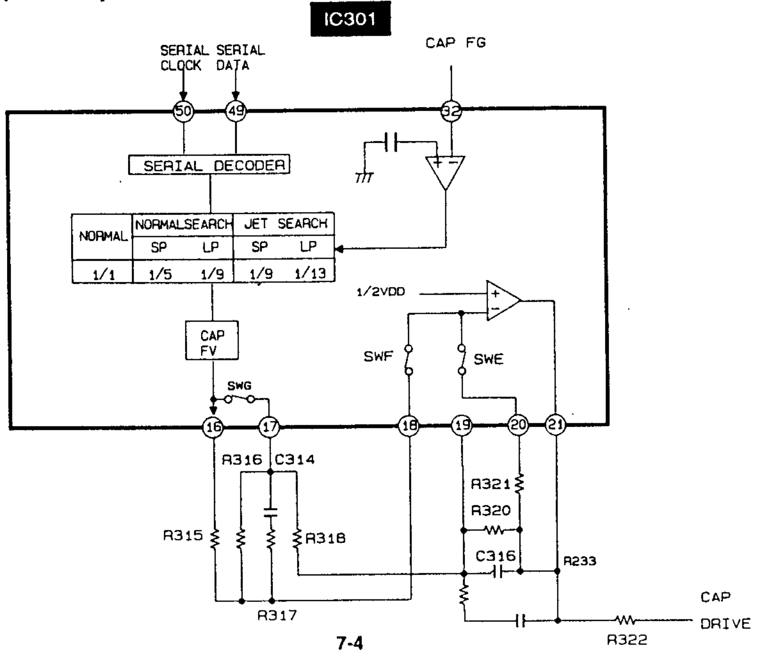
7-3. Cylinder Speed Control


IC301
SERIAL DATA
SERIAL CLOCK
SERIAL DET
FF. VP GEN
DRUM FV
R305
R303
C306
C307
R304
D-FG
DRUM DRIVE
DRUM ERROR
PHASE VOLTAGE
9
12
13
11
14
15

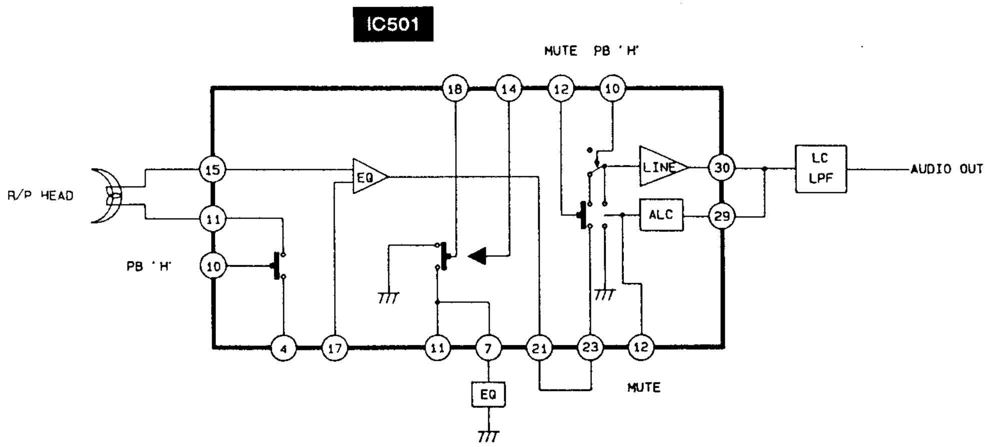
7-4. Capstan Phase Control


IC301
TP301 CTL
C322
R328
R326
C321
C320
R325
C319
R324
SWD
SWA
SWC
SWB
SERIAL DATA
SERIAL CLOCK
DUTY CTL NOISE DET
DRUM REF
CAP REF
CAP PD
C317
CTL HEAD
R323
SPEED CTL
SWH
R309
R310
PC 5V
C310
C311
31
30
29
28
27
25
24
49
50
14
15

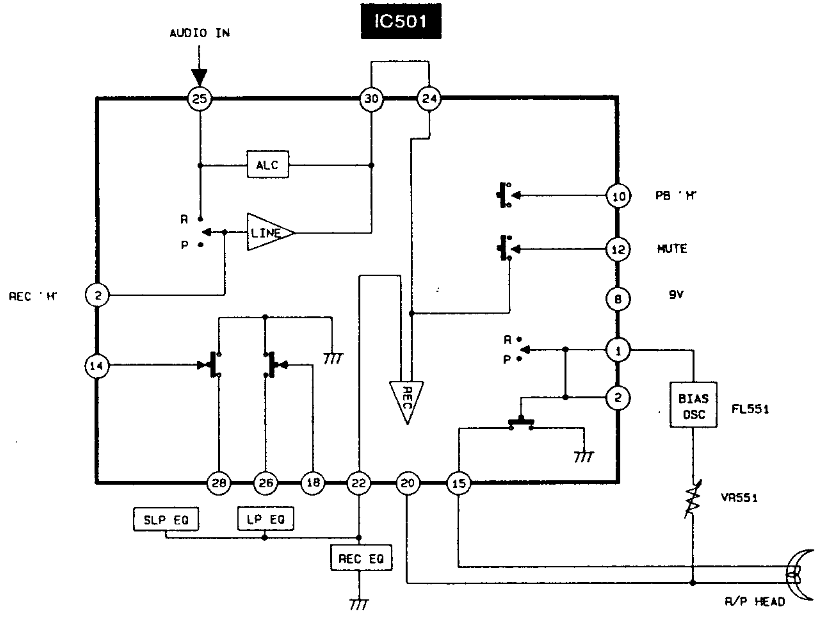
7-5. Capstan Speed Control


IC301
SERIAL CLOCK
SERIAL DATA
CAP FG
SERIAL DECODER
NORMAL
NORMALSEARCH
JET SEARCH
SP
LP
SP
LP
1/1
1/5
1/9
1/9
1/13
1/2VDD
CAP FV
SWF
SWE
SWG
R316
C314
R315
R318
R317
R321
R320
C316
R233
CAP DRIVE
R322
50
49
32
16
17
18
19
20
21

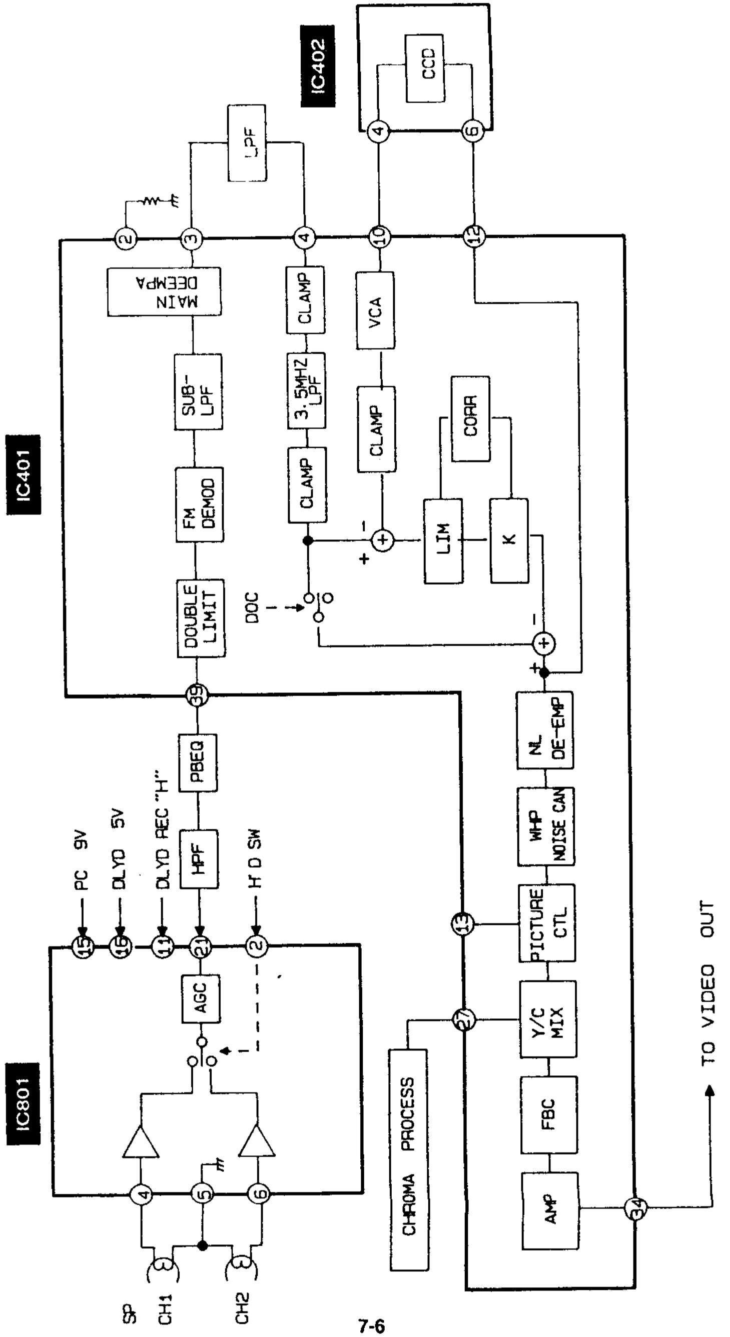
7-6. Audio Playback Process


IC501
MUTE PB 'H'
R/P HEAD
PB 'H'
EQ
LINE
ALC
LC LPF
AUDIO OUT
EQ
MUTE
15
11
10
18
14
12
10
30
29
4
17
11
7
21
23
12

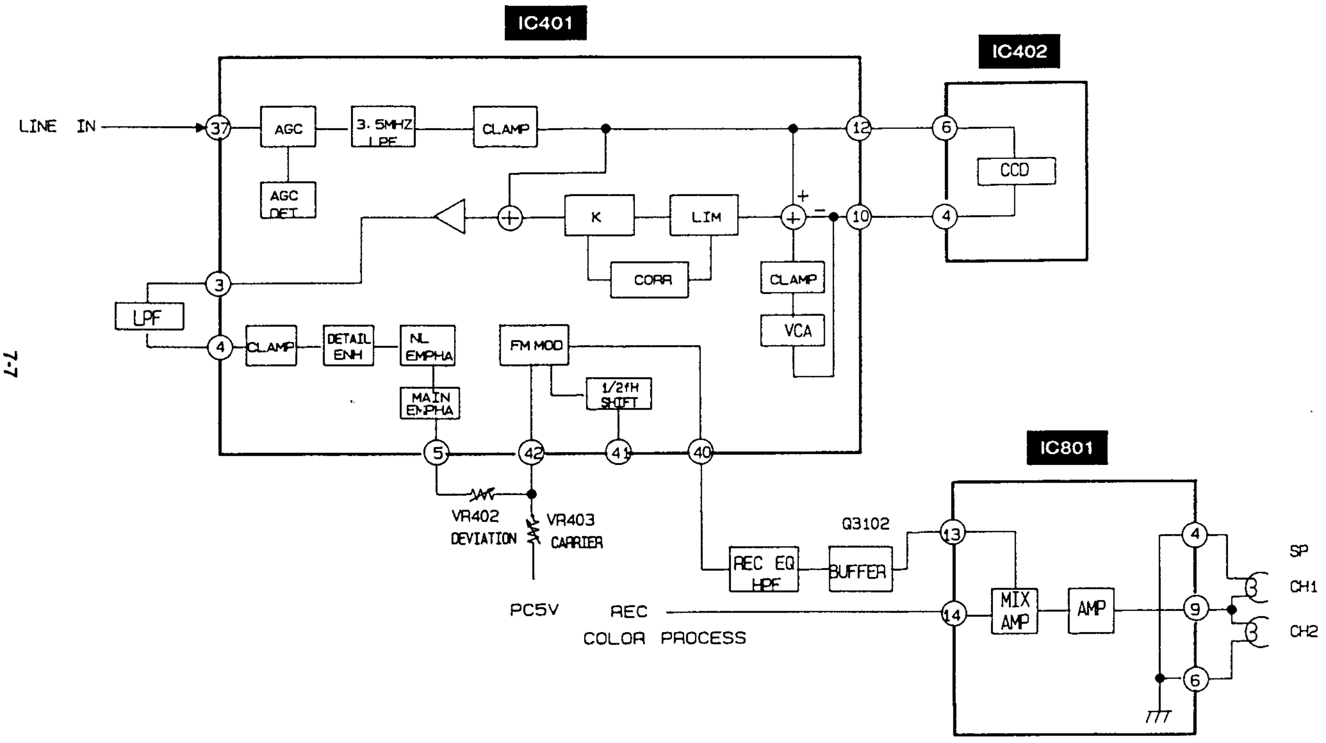
7-7. Audio Record Process


IC501
AUDIO IN
ALC
LINE
R
P
REC 'H'
REC
PB 'H'
MUTE
9V
BIAS OSC
FL551
VR551
SLP EQ
LP EQ
REC EQ
R/P HEAD
25
30
24
10
12
8
1
2
14
28
26
18
22
20
15

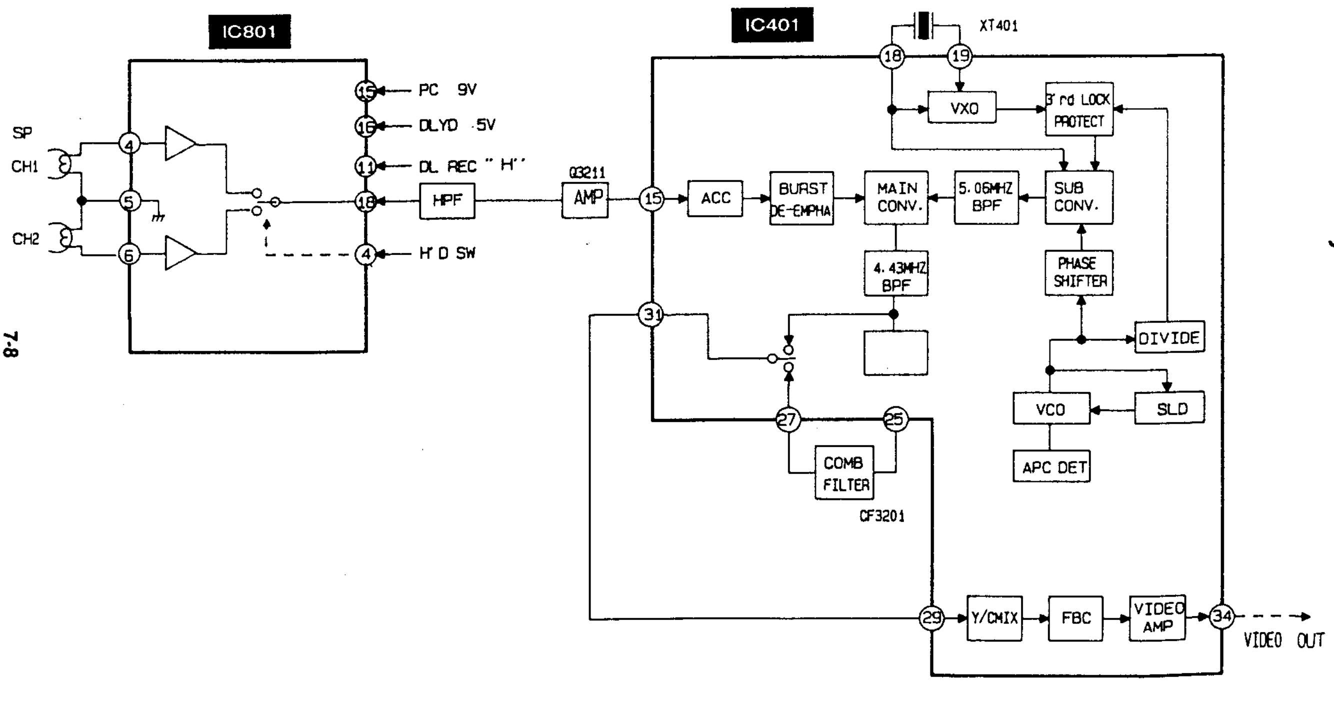
7-8. Luminance Playback Process


IC402
CCD
IC401
LPF
MAIN DEEMPA
SUB-LPF
FM DEMOD
DOUBLE LIMIT
CLAMP
3.5MHZ LPF
CLAMP
VCA
CLAMP
CORR
LIM
K
DOC
NL DE-EMP
WHP NOISE CAN
PICTURE CTL
Y/C MIX
FBC
AMP
CHROMA PROCESS
PBEQ
HPF
AGC
IC801
PC 9V
DLYD 5V
DLYD REC "H"
H' D SW
SP
CH1
CH2
TO VIDEO OUT
2
3
4
10
12
39
13
27
34
15
16
11
21
2
4
5
6
4
6

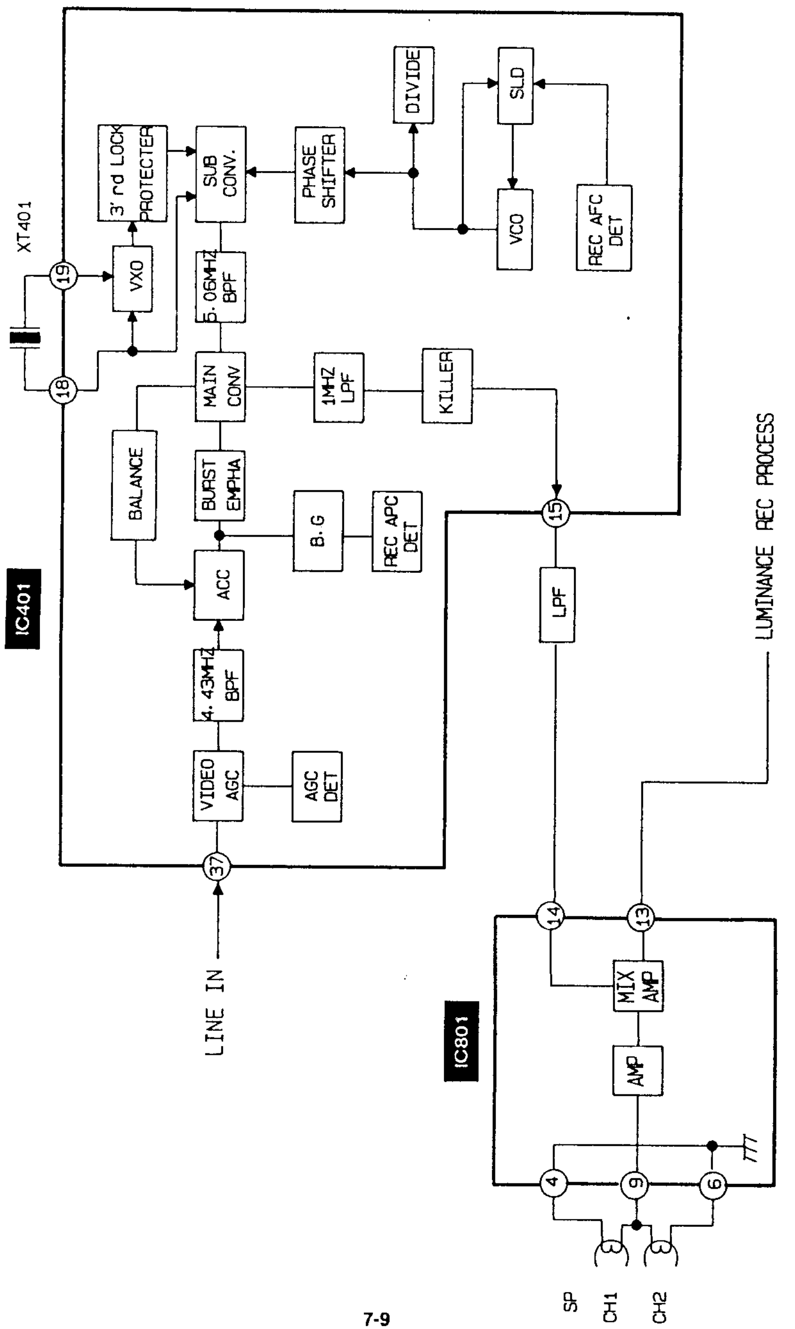
7-9. Luminance Record Process


IC401
IC402
IC801
LINE IN
37
AGC
3.5MHZ LPF
CLAMP
AGC DET
K
LIM
CORR
CLAMP
VCA
12
10
+
−
6
4
CCD
3
4
LPF
CLAMP
DETAIL ENH
NL EMPHA
MAIN EMPHA
FM MOD
1/2fH SHIFT
5
42
41
40
VR402 DEVIATION
VR403 CARRIER
PC5V
REC EQ HPF
BUFFER
Q3102
REC COLOR PROCESS
13
14
MIX AMP
AMP
4
9
6
SP
CH1
CH2

7-10. PAL Chrominance Playback Process


IC801
SP
CH1
CH2
4
5
6
15
16
11
18
4
PC 9V
DLYD 5V
DL REC "H"
H'D SW
HPF
Q3211
AMP
IC401
XT401
18
19
VXO
3'rd LOCK PROTECT
15
ACC
BURST DE-EMPHA
MAIN CONV.
5.06MHZ BPF
SUB CONV.
4.43MHZ BPF
PHASE SHIFTER
DIVIDE
31
VCO
SLD
APC DET
27
25
COMB FILTER
CF3201
29
Y/CMIX
FBC
VIDEO AMP
34
VIDEO OUT

7-11. PAL Chrominance Record Process


IC401
XT401
18
19
BALANCE
VXO
3' rd LOCK PROTECTER
LINE IN
37
VIDEO AGC
4.43MHZ BPF
ACC
BURST EMPHA
MAIN CONV
5.06MHZ BPF
SUB CONV.
AGC DET
B.G
REC APC DET
1MHZ LPF
PHASE SHIFTER
DIVIDE
KILLER
VCO
SLD
REC AFC DET
IC801
LPF
15
14
13
4
9
6
SP
CH1
CH2
AMP
MIX AMP
LUMINANCE REC PROCESS

8. CIRCUIT BOARDS

Page

8-1. Regulator ---------------------- 8-2

8-2. SUB (SECAM) -------------------- 8-2

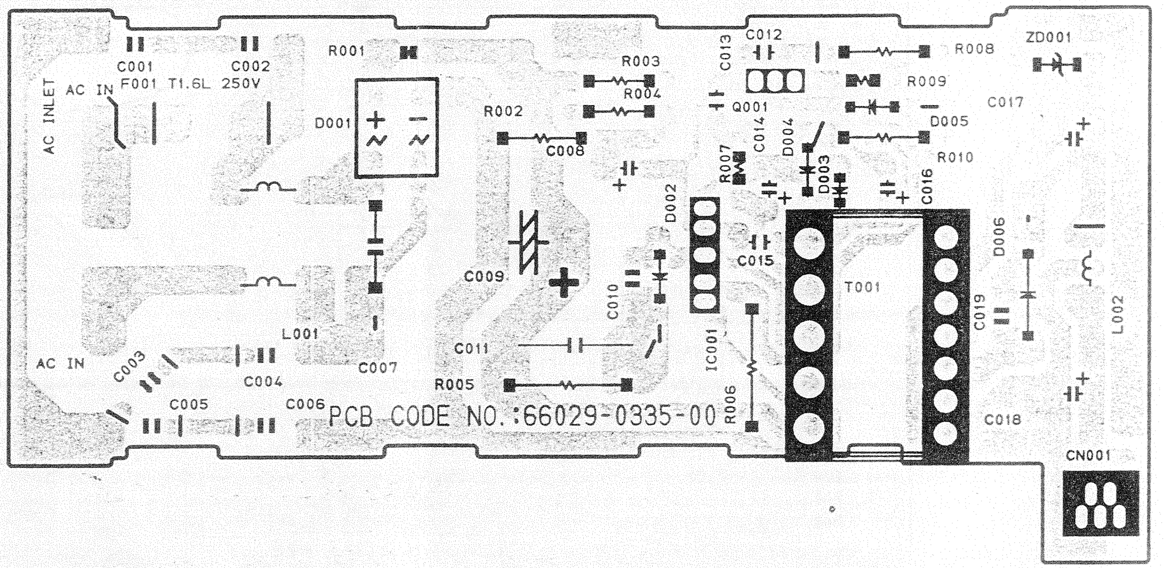
8-3. Main A ------------------------- 8-3

8-4. Main B ------------------------- 8-4

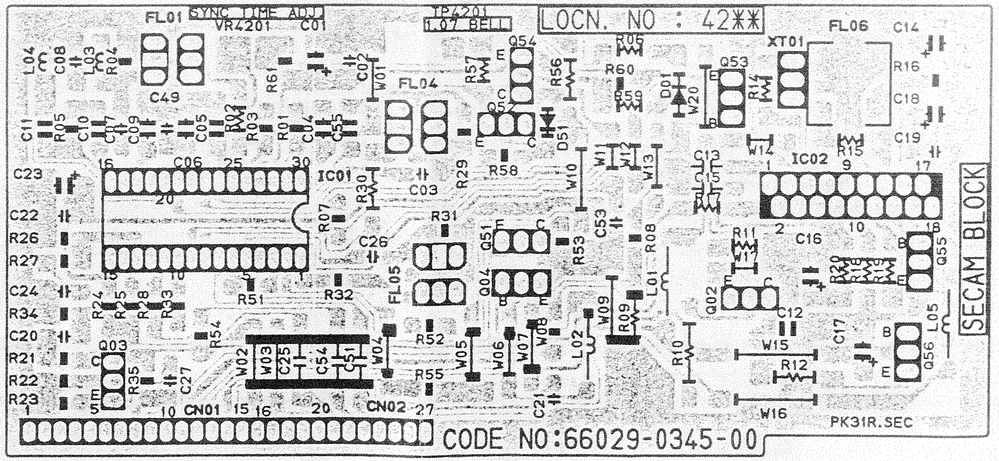
8-5. Function (VK/PK-30R, VK/PK-32R) ----- 8-4

8-6. Function (VK/PK-31R) -------------- 8-4

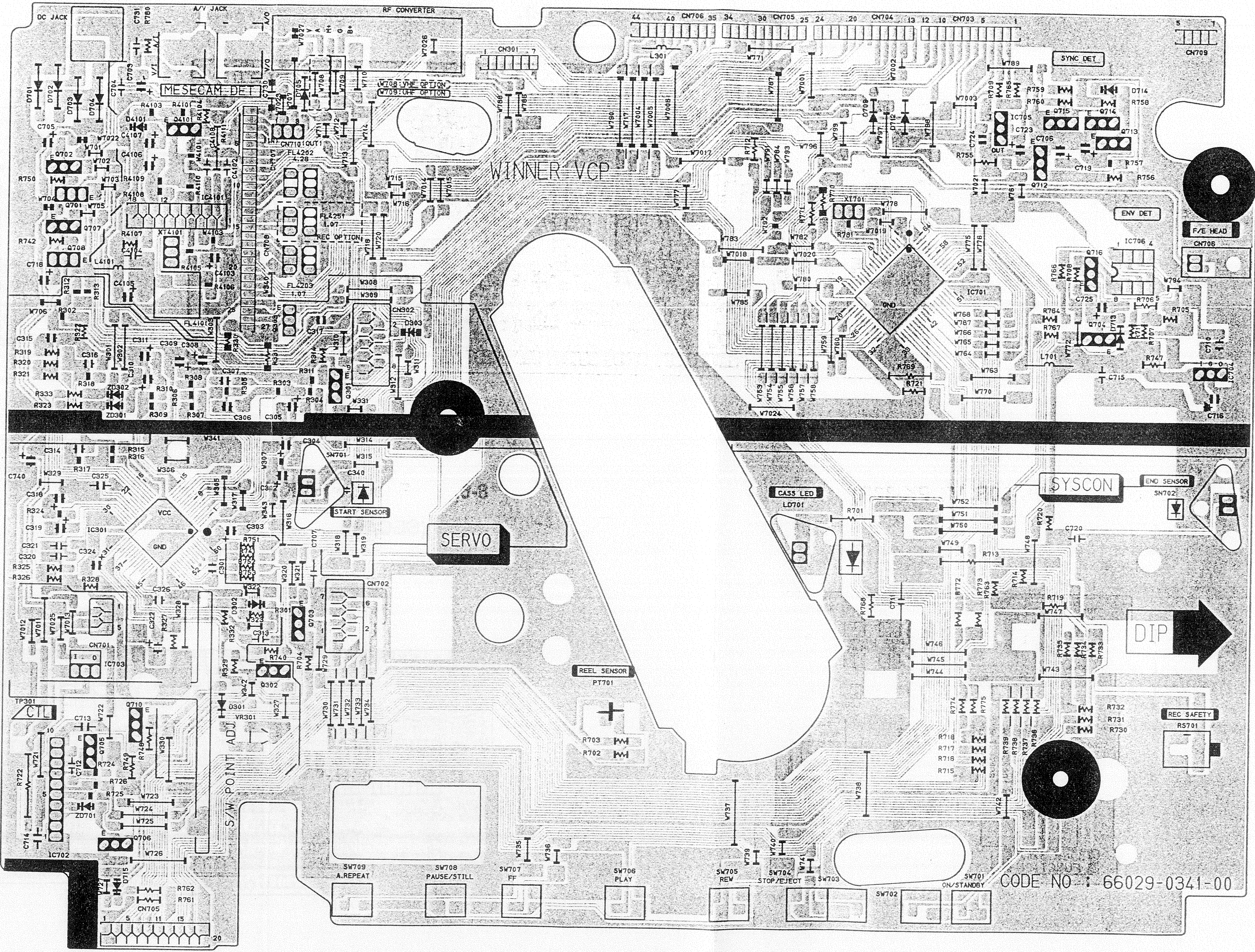
8-1. Regulator


AC INLET
AC IN
F001 T1.6L 250V
C001
C002
R001
D001
R002
R003
R004
C008
C009
L001
AC IN
C003
C004
C005
C006
C007
C011
R005
R006
C010
D002
IC001
C012
C013
Q001
C014
D004
D003
R007
C015
C016
R008
R009
R010
D005
ZD001
C017
T001
D006
C019
L002
C018
CN001
PCB CODE NO.:66029-0335-00

8-2. SUB (SECAM)

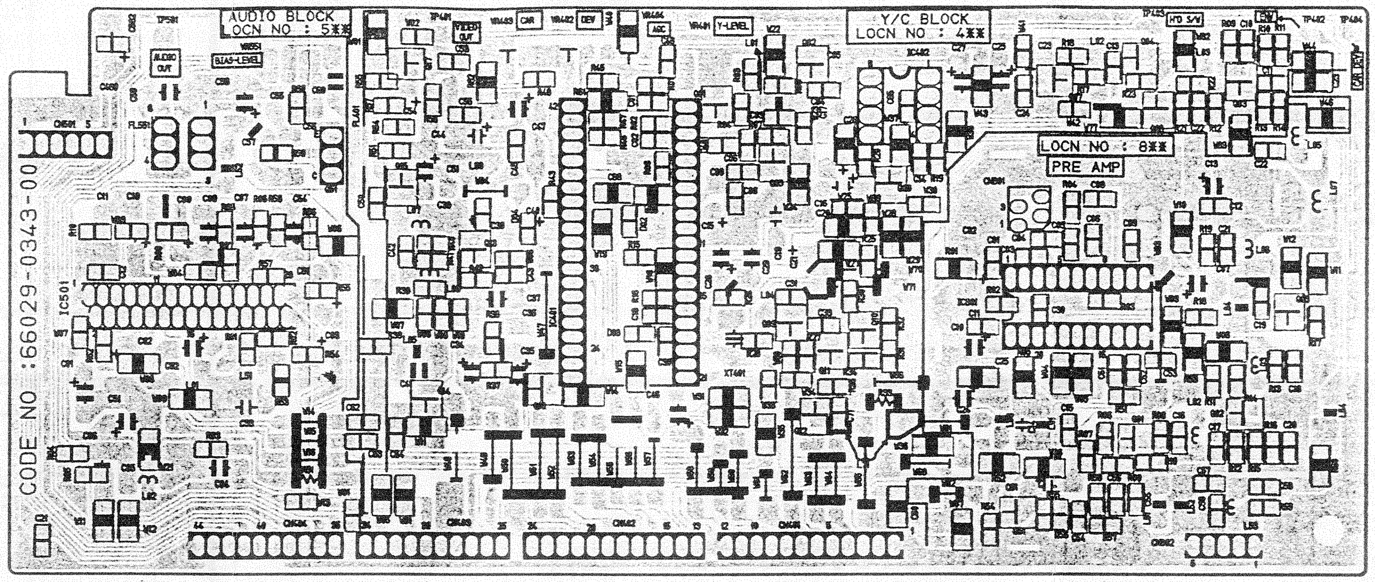

FL01
SYNC TIME ADJ
VR4201
TP4201
1.07 BELL
LOCN. NO : 42**
FL06
XT01
C49
FL04
IC01
IC02
Q53
Q54
Q51
Q04
Q02
Q03
Q55
Q56
FL05
C16
C12
R58
R31
R32
R51
R52
R54
R55
W15
W16
R12
CN01
CN02
SECAM BLOCK
PK31R.SEC
CODE NO:66029-0345-00

8-3. Main A

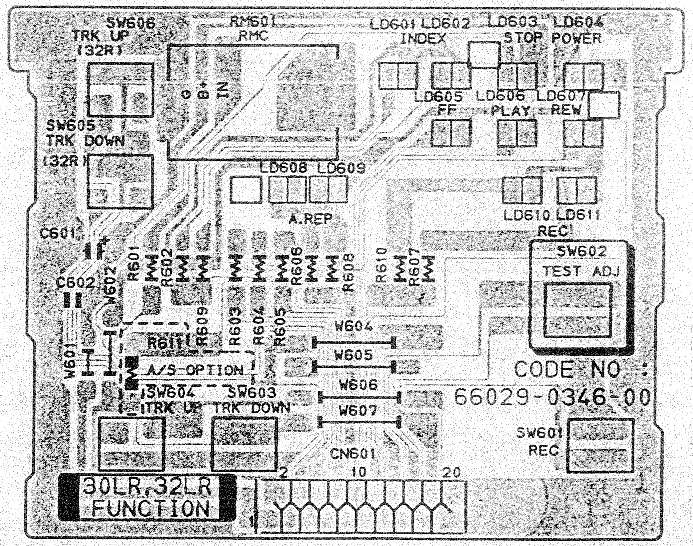

DC JACK
A/V JACK
RF CONVERTER
MESECAM DET
W708:VHF OPTION
W709:UHF OPTION
CN301
CN706
CN705
CN704
CN703
CN709
SYNC DET
WINNER VCP
F/E HEAD
CN706
ENV DET
IC706
IC701
GND
REC OPTION
CN302
START SENSOR
SERVO
VCC
GND
IC301
CN702
CN701
IC703
CASS LED
LD701
SYSCON
END SENSOR
SN702
DIP
REEL SENSOR
PT701
REC SAFETY
RS701
TP301
CTL
IC702
CN705
S/W POINT ADJ
VR301
SW709
A.REPEAT
SW708
PAUSE/STILL
SW707
FF
SW706
PLAY
SW705
REW
SW704
STOP/EJECT
SW703
SW702
SW701
ON/STANDBY
CODE NO : 66029-0341-00

8-4. Main B

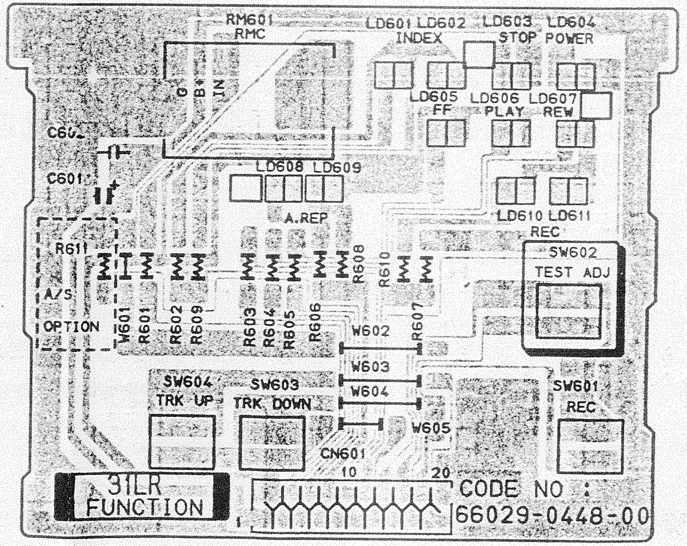
☐ : CHIP Parts


AUDIO BLOCK
LOCN NO : 5※※
Y/C BLOCK
LOCN NO : 4※※
LOCN NO : 8※※
PRE AMP
IC501
CODE NO :66029-0343-00

8-5. Function (VK/PK-30R, VK/PK-32R)


SW606
TRK UP
(32R)
RM601
RMC
LD601 LD602 LD603 LD604
INDEX STOP POWER
LD605 LD606 LD607
FF PLAY REW
SW605
TRK DOWN
(32R)
LD608 LD609
A.REP
C601
C602
LD610 LD611
REC
SW602
TEST ADJ
R601
R602
R603
R604
R605
R606
R607
R608
R609
R610
R611
W601
W602
A/S-OPTION
SW604 SW603
TRK UP TRK DOWN
W604
W605
W606
W607
CODE NO :
66029-0346-00
SW601
REC
CN601
2 10 20
30LR,32LR
FUNCTION

8-6. Function (VK/PK-31R)


RM601
RMC
LD601 LD602 LD603 LD604
INDEX STOP POWER
LD605 LD606 LD607
FF PLAY REW
C602
C601
LD608 LD609
A.REP
LD610 LD611
REC
SW602
TEST ADJ
R611
A/S
OPTION
W601
R601
R602
R609
R603
R604
R605
R606
R608
R610
R607
W602
W603
W604
W605
SW604 SW603
TRK UP TRK DOWN
SW601
REC
CN601
10 20
31LR
FUNCTION
CODE NO :
66029-0448-00

9. SCHEMATIC DIAGRAMS

Page

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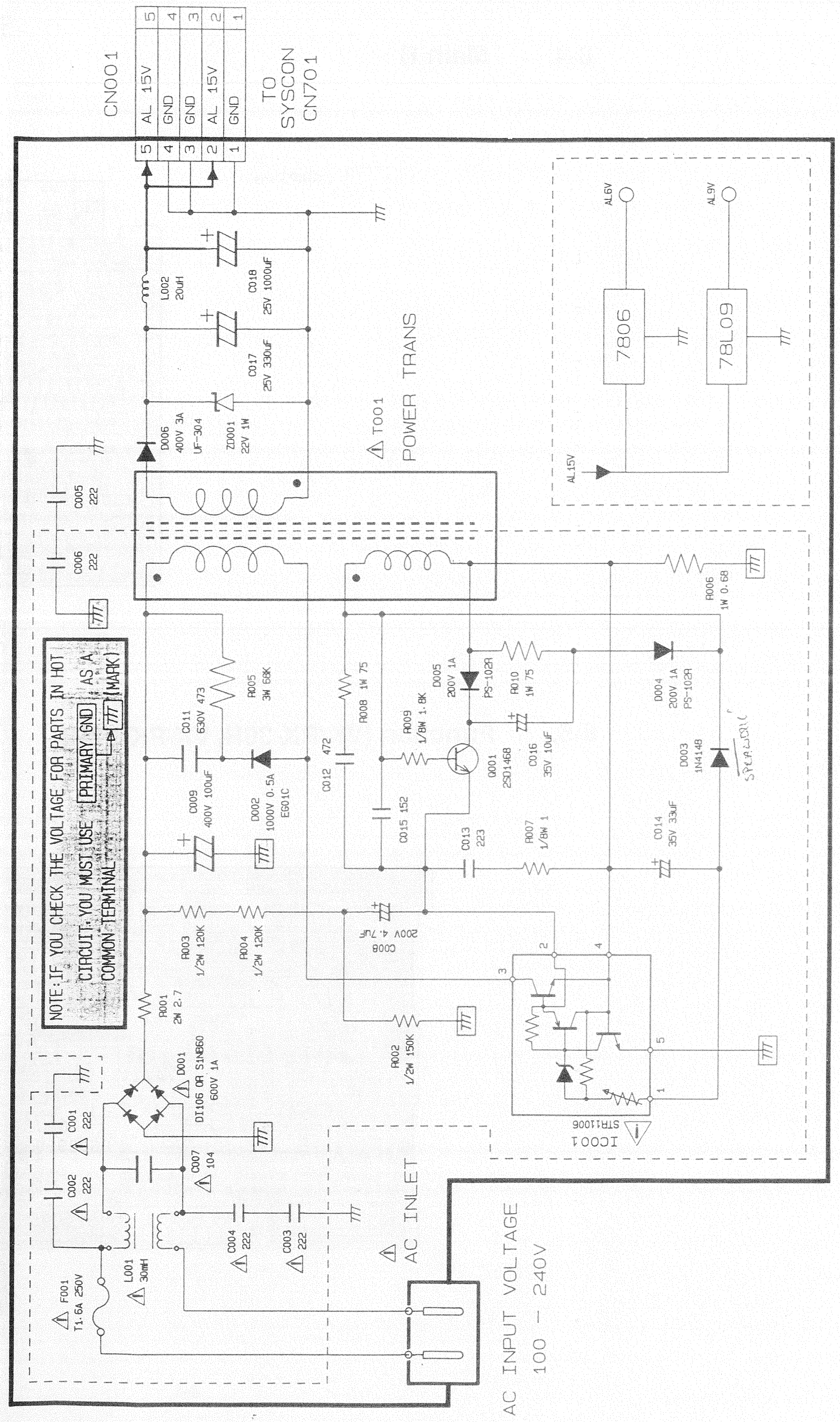
9-8. MESECAM DET. ------------------- 9-14

9-9. Function ----------------------- 9-15

9-10. Remote Control ------------------ 9-16

9-1. Regulator



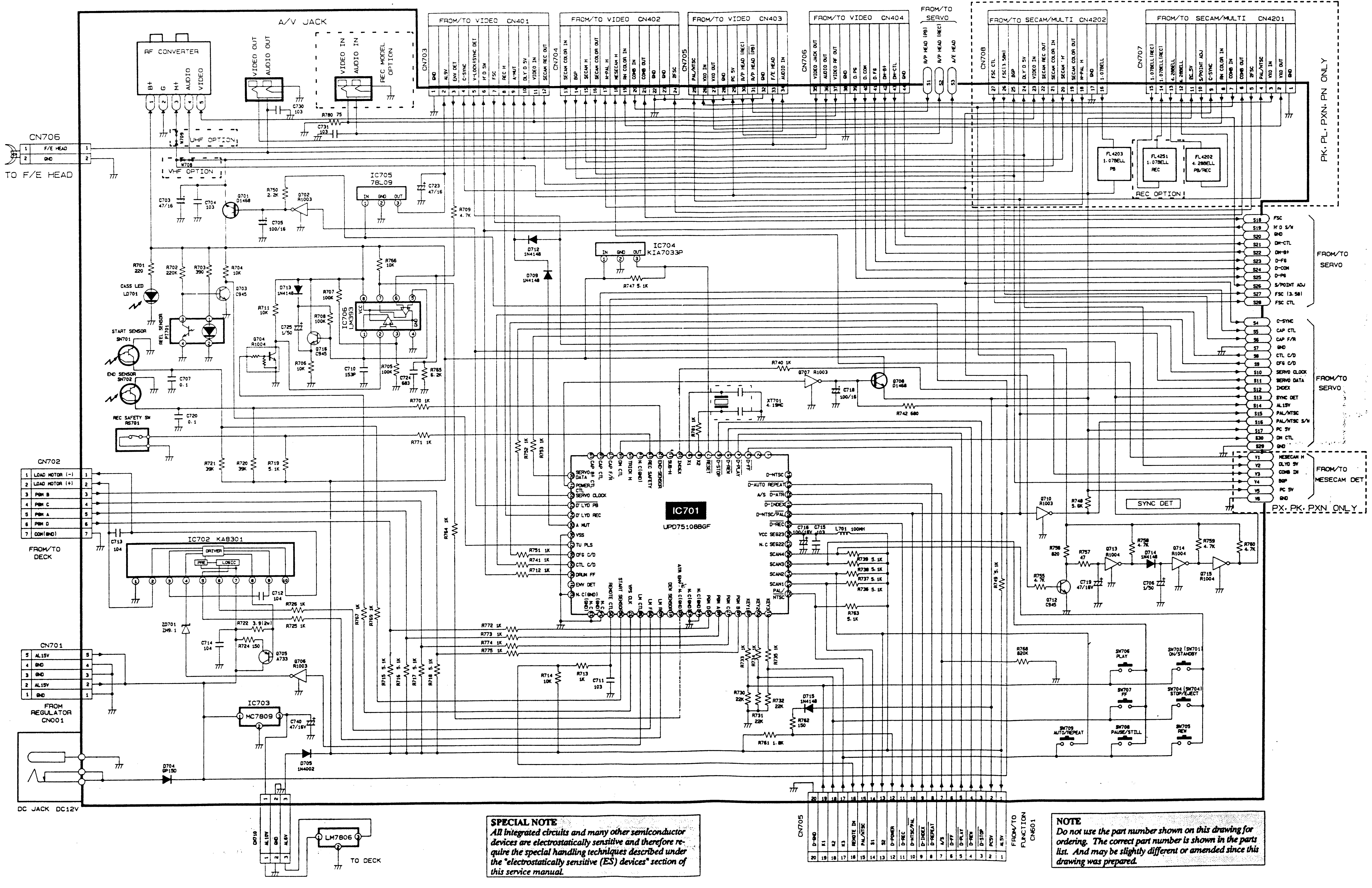
CN001
AL 15V
GND
GND
AL 15V
GND
5
4
3
2
1
TO SYSCON CN701
L002 20uH
C018 25V 1000uF
C017 25V 330uF
D006 400V 3A UF-304
ZD001 22V 1W
T001 POWER TRANS
AL6V
AL9V
7806
78L09
AL15V
C005 222
C006 222
NOTE: IF YOU CHECK THE VOLTAGE FOR PARTS IN HOT CIRCUIT, YOU MUST USE PRIMARY GND AS A COMMON TERMINAL (MARK)
C011 630V 473
R005 3W 68K
C009 400V 100uF
D002 1000V 0.5A EG01C
C012 472
C015 152
R008 1W 75
R009 1/8W 1.8K
D005 200V 1A PS-102R
R010 1W 75
Q001 2SD1468
C016 35V 10uF
C013 223
R007 1/8W 1
R006 1W 0.68
D004 200V 1A PS-102R
D003 1N4148
C014 35V 33uF
R003 1/2W 120K
R004 1/2W 120K
C008 200V 4.7uF
R001 2W 2.7
D001 D1106 OR S1NB60 600V 1A
R002 1/2W 150K
IC001 STR11006
1
2
3
4
5
C001 222
C002 222
C007 104
C004 222
C003 222
L001 30mH
F001 T1.6A 250V
AC INLET
AC INPUT VOLTAGE 100 - 240V

SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

IMPORTANT SAFETY NOTICES
Components identified with the mark ⚠ have the special charateristics for safety when replacing any of these components. Use only the same type.

9-2. System Control


A/V JACK
RF CONVERTER
VIDEO OUT
AUDIO OUT
VIDEO IN
AUDIO IN
REC MODEL OPTION
UHF OPTION
VHF OPTION
CN706
F/E HEAD
GND
TO F/E HEAD
FROM/TO VIDEO CN401
FROM/TO VIDEO CN402
FROM/TO VIDEO CN403
FROM/TO VIDEO CN404
FROM/TO SERVO
FROM/TO SECAM/MULTI CN4202
FROM/TO SECAM/MULTI CN4201
CN703
CN704
CN705
CN706
CN708
CN707
PK, PL, PXN, PN ONLY
FL4203 1.07BELL PB
FL4251 1.07BELL REC
FL4202 4.286ELL PB/REC
REC OPTION
IC705 78L09
IC704 KIA7033P
IC706 LM393
IC701
UPD75108BGF
IC702 KA8301
DRIVER
PRE
LOGIC
IC703 MC7809
LM7806
XT701 4.19MHz
CASS LED LD701
START SENSOR SW701
REEL SENSOR PT701
END SENSOR SW702
REC SAFETY SW RS701
CN702
LOAD MOTOR (-)
LOAD MOTOR (+)
PBM B
PBM C
PBM A
PBM D
COM(GND)
FROM/TO DECK
CN701
AL15V
GND
GND
AL15V
GND
FROM REGULATOR CN001
DC JACK DC12V
TO DECK
FROM/TO SERVO
FROM/TO SERVO
FROM/TO MESECAM DET
PX, PK, PXN ONLY
SYNC DET
SW706 PLAY
SW701 (SW701) ON/STANDBY
SW707 FF
SW704 (SW704) STOP/EJECT
SW709 AUTO/REPEAT
SW708 PAUSE/STILL
SW705 REW
CN705
FROM/TO FUNCTION CN601

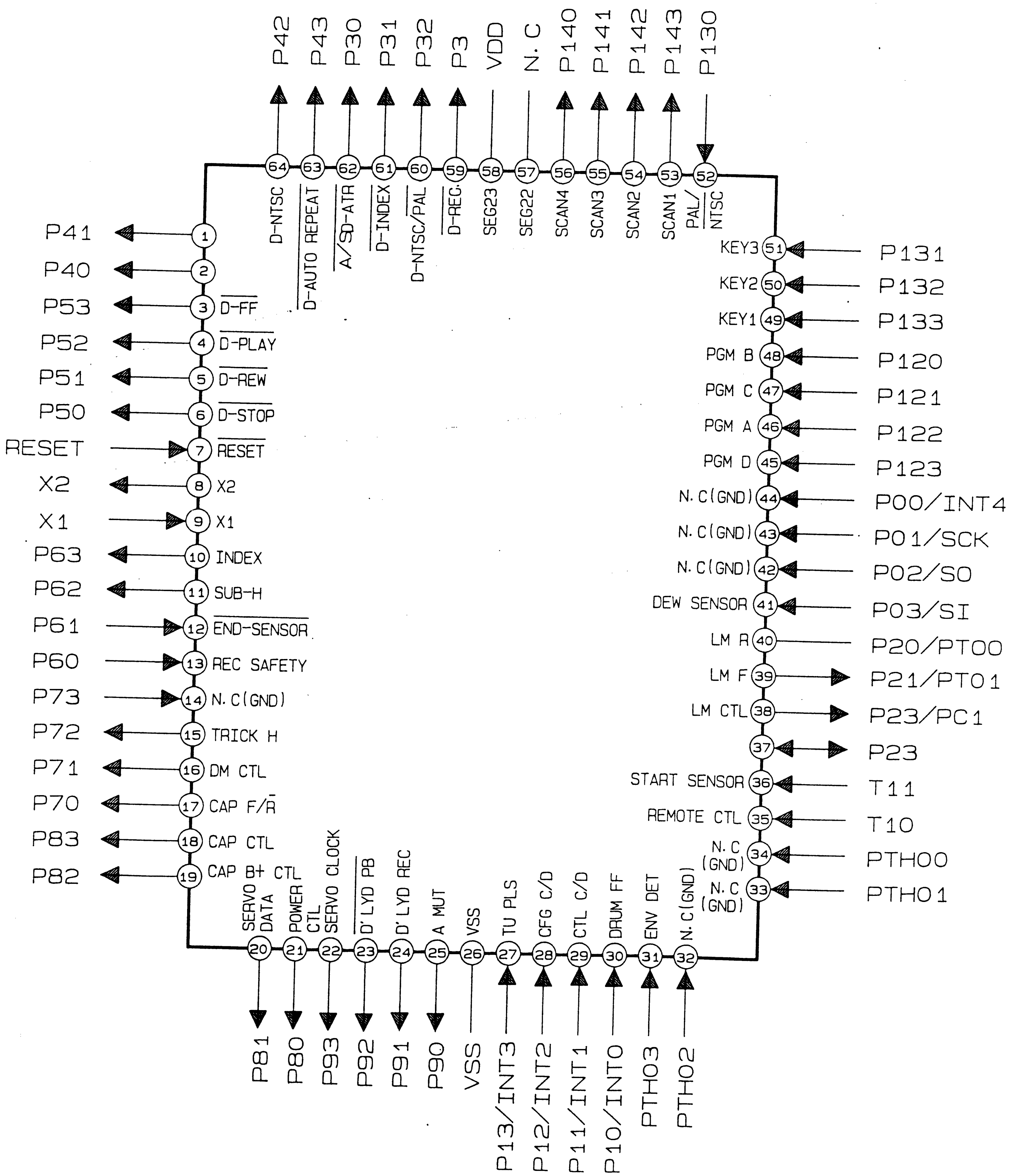
SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

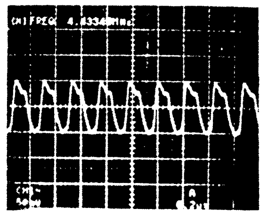
IC701

PIN NO \ MODE	STOP	REC	PLAY	PIN NO \ MODE	STOP	REC	PLAY
PIN 1	5.1	5.1	5.1	PIN 33	0	0	0
PIN 2	5.1	5.1	5.1	PIN 34	0	0	0
PIN 3	5.1	5.1	5.1	PIN 35	5.1	5.1	5.1
PIN 4	5.1	5.1	0	PIN 36	4.7	4.7	4.7
PIN 5	5.1	5.1	5.1	PIN 37	5.1	5.1	5.1
PIN 6	0	5.1	5.1	PIN 38	5.1	5.1	5.1
PIN 7	5.1	5.1	5.1	PIN 39	4.9	4.9	5.1
PIN 8	2.7	2.7	2.7	PIN 40	4.9	4.9	5.1
PIN 9	2.5	2.5	2.5	PIN 41	–	–	–
PIN 10	4.9	4.9	5.0	PIN 42	0	5.1	5.1
PIN 11	0	0	0	PIN 43	0	0	0
PIN 12	5.1	5.1	5.1	PIN 44	0	0	0
PIN 13	5.1	5.1	5.1	PIN 45	5.1	5.1	5.1
PIN 14	0	0	0	PIN 46	0	0	5.1
PIN 15	–	–	–	PIN 47	0	0	0
PIN 16	–	–	–	PIN 48	0	0	0
PIN 17	00	5.1	0	PIN 49	0	0	0
PIN 18	5.0	0	0	PIN 50	0	0	0
PIN 19	–	–	–	PIN 51	0	0	0
PIN 20	0.2	0.2	0.2	PIN 52	5.1	5.1	5.1
PIN 21	0	0	0	PIN 53	1.3	1.3	1.3
PIN 22	0.2	0.2	0.2	PIN 54	1.3	1.3	1.3
PIN 23	4.5	4.5	0	PIN 55	1.3	1.3	1.3
PIN 24	0	4.9	0	PIN 56	1.3	1.3	1.3
PIN 25	0	0	0	PIN 57	3.7	3.7	3.7
PIN 26	0	0	0	PIN 58	5.1	5.1	5.1
PIN 27	0	5.1	0	PIN 59	5.1	0.7	5.1
PIN 28	4.9	2.4	2.5	PIN 60	0	0	0
PIN 29	0	4.9	0	PIN 61	5.1	5.1	5.1
PIN 30	0	0.9-4.2	0.9-4.2	PIN 62	0	0	0
PIN 31	–	–	–	PIN 63	5.1	5.1	5.1
PIN 32	0	0	0	PIN 64	–	–	–

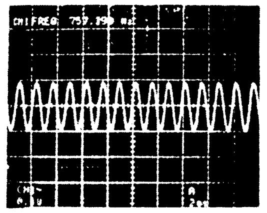
IC701 UPD75108BGF


P42
P43
P30
P31
P32
P3
VDD
N.C
P140
P141
P142
P143
P130
64 D-NTSC
63 D-AUTO REPEAT
62 A/SD-ATR
61 D-INDEX
60 D-NTSC/PAL
59 D-REC
58 SEG23
57 SEG22
56 SCAN4
55 SCAN3
54 SCAN2
53 SCAN1
52 PAL/NTSC
P41 1
P40 2
P53 3 D-FF
P52 4 D-PLAY
P51 5 D-REW
P50 6 D-STOP
RESET 7 RESET
X2 8 X2
X1 9 X1
P63 10 INDEX
P62 11 SUB-H
P61 12 END-SENSOR
P60 13 REC SAFETY
P73 14 N.C(GND)
P72 15 TRICK H
P71 16 DM CTL
P70 17 CAP F/R
P83 18 CAP CTL
P82 19 CAP B+ CTL
20 SERVO DATA P81
21 POWER CTL P80
22 SERVO CLOCK P93
23 D' LYD PB P92
24 D' LYD REC P91
25 A MUT P90
26 VSS VSS
27 TU PLS P13/INT3
28 CFG C/D P12/INT2
29 CTL C/D P11/INT1
30 DRUM FF P10/INT0
31 ENV DET PTH03
32 N.C(GND) PTH02
KEY3 51 P131
KEY2 50 P132
KEY1 49 P133
PGM B 48 P120
PGM C 47 P121
PGM A 46 P122
PGM D 45 P123
N.C(GND) 44 P00/INT4
N.C(GND) 43 P01/SCK
N.C(GND) 42 P02/SO
DEW SENSOR 41 P03/SI
LM R 40 P20/PT00
LM F 39 P21/PT01
LM CTL 38 P23/PC1
37 P23
START SENSOR 36 T11
REMOTE CTL 35 T10
N.C (GND) 34 PTH00
N.C (GND) 33 PTH01

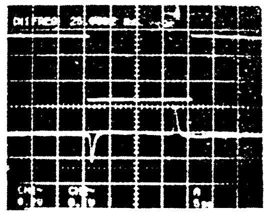
9-3. Servo



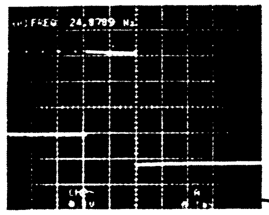
IC301-37
1Vp-p
PB



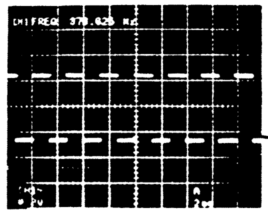
IC301-32
2Vp-p
PB



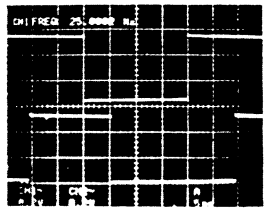
IC301-41
2Vp-p
PB



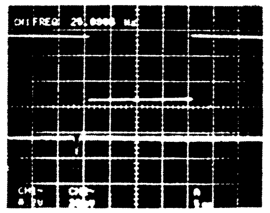
IC301-44
5Vp-p
STILL



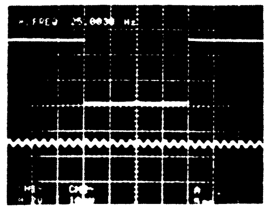
IC301-51
5Vp-p
PB



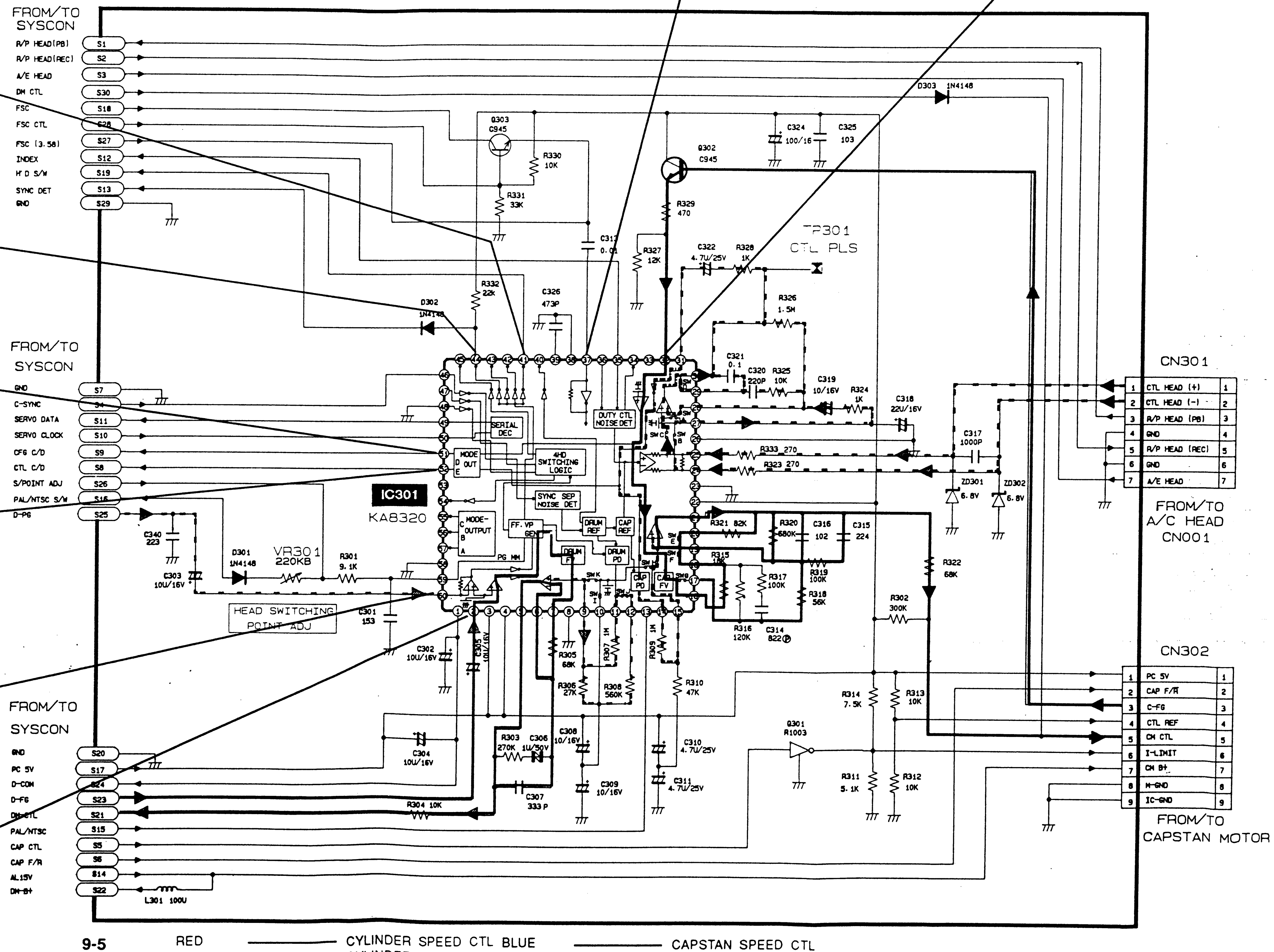
IC301-52
5Vp-p
PB



IC301-60
100mVp-p
PB



IC301-2
40mVp-p
PB

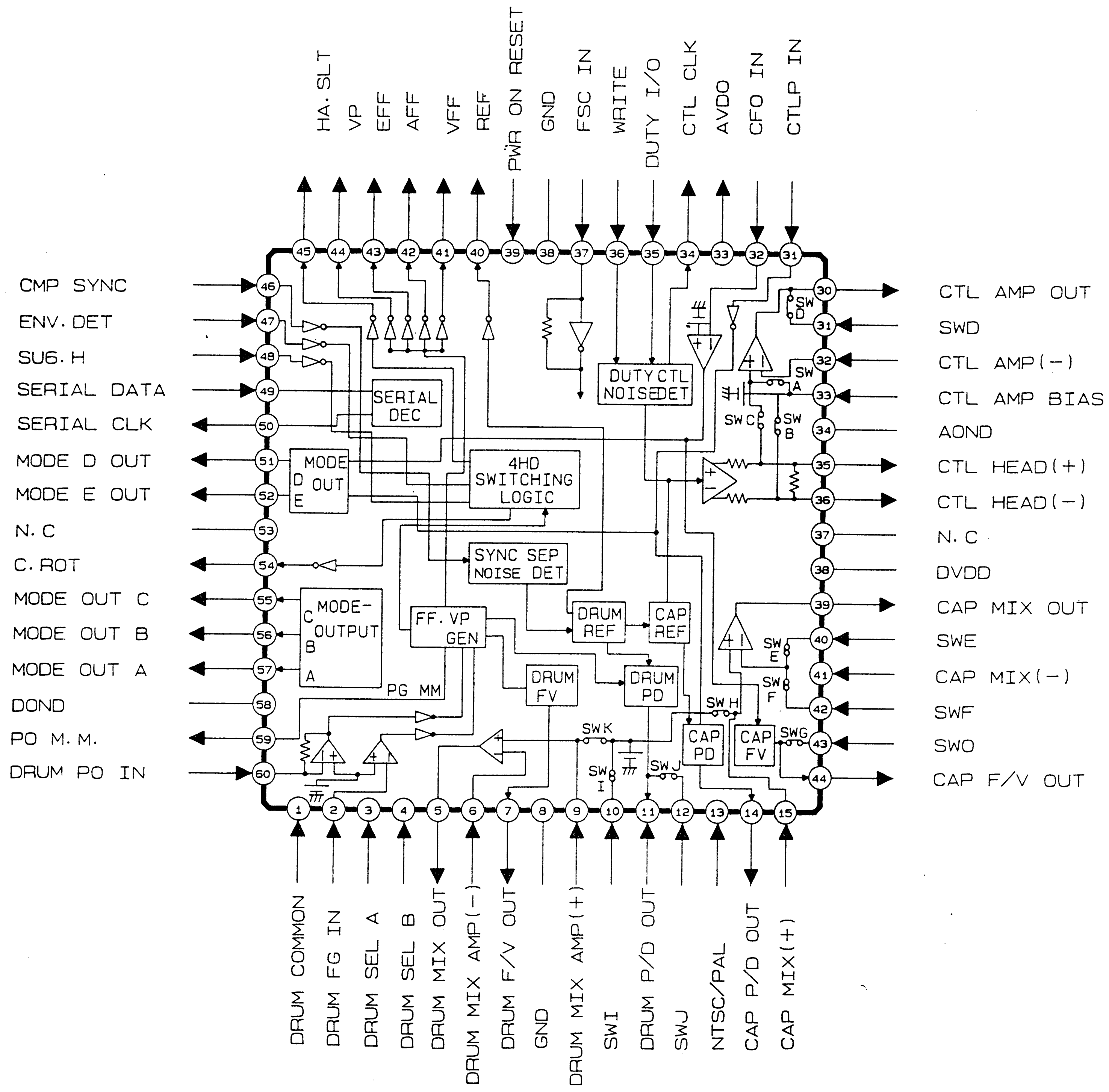

FROM/TO SYSCON
R/P HEAD(PB) S1
R/P HEAD(REC) S2
A/E HEAD S3
DM CTL S30
FSC S18
FSC CTL S28
FSC (3.58) S27
INDEX S12
H'D S/W S19
SYNC DET S13
GND S29
FROM/TO SYSCON
GND S7
C-SYNC S4
SERVO DATA S11
SERVO CLOCK S10
CFG C/D S9
CTL C/D S8
S/POINT ADJ S26
PAL/NTSC S/W S16
D-PG S25
FROM/TO SYSCON
GND S20
PC 5V S17
D-COM S24
D-FG S23
DM-CTL S21
PAL/NTSC S15
CAP CTL S5
CAP F/R S6
AL15V S14
DM-B+ S22
IC301
KA8320
SERIAL DEC
MODE DECODE OUT
4HD SWITCHING LOGIC
SYNC SEP NOISE DET
DUTY CTL NOISE DET
MODE-OUTPUT
FF. VP GEN
DRUM REF
CAP REF
DRUM FV
DRUM PD
CAP PD
CAP FV
HEAD SWITCHING POINT ADJ
VR301 220KB
TP301 CTL PLS
Q303 C945
Q302 C945
Q301 R1003
D301 1N4148
D302 1N4148
D303 1N4148
ZD301 6.8V
ZD302 6.8V
L301 100U
CN301
1 CTL HEAD (+)
2 CTL HEAD (-)
3 R/P HEAD (PB)
4 GND
5 R/P HEAD (REC)
6 GND
7 A/E HEAD
FROM/TO A/C HEAD CN001
CN302
1 PC 5V
2 CAP F/R
3 C-FG
4 CTL REF
5 CM CTL
6 I-LIMIT
7 CM B+
8 M-GND
9 IC-GND
FROM/TO CAPSTAN MOTOR

RED ———— CYLINDER SPEED CTL BLUE ———— CAPSTAN SPEED CTL
- - - - - - CYLINDER PHASE CTL - - - - - - CAPSTAN PHASE CTL

IC301

MODE / PIN NO	STOP	REC	PLAY	MODE / PIN NO	STOP	REC	PLAY
PIN 1	0	2.4	2.5	PIN 31	2.5	2.3	2.5
PIN 2	2.5	2.4	2.5	PIN 32	2.4	2.4	2.4
PIN 3	5.0	5.0	5.0	PIN 33	–	–	–
PIN 4	5.0	5.0	5.0	PIN 34	–	–	–
PIN 5	1.4	1.4	1.4	PIN 35	4.9	4.9	4.9
PIN 6	2.5	2.5	2.5	PIN 36	–	–	–
PIN 7	2.5	2.5	2.5	PIN 37	2.4	2.4	2.4
PIN 8	0	0	0	PIN 38	0	0	0
PIN 9	2.5	2.5	2.5	PIN 39	4.9	4.9	4.9
PIN 10	1.5	2.5	2.5	PIN 40	–	–	–
PIN 11	2.9	2.9	2.5	PIN 41	0-5	0-5	0-5
PIN 12	2.9	2.9	2.3	PIN 42	–	–	–
PIN 13	0	0	0	PIN 43	–	–	–
PIN 14	0	2.5	0	PIN 44	0	0	0
PIN 15	2.5	2.5	2.5	PIN 45	–	–	–
PIN 16	0	2.5	2.5	PIN 46	3.9	3.9	1.6
PIN 17	0	0	0	PIN 47	–	–	–
PIN 18	0	2.5	2.5	PIN 48	0	0	0
PIN 19	0	0	2.5	PIN 49	0.7	0.7	0.7
PIN 20	0	2.1	2.1	PIN 50	0.9		0.9
PIN 21	0	2.1	0	PIN 51	4.9	2.4	2.4
PIN 22	5.0	5.0	5.0	PIN 52	4.9	4.9	4.9
PIN 23	0	0	0	PIN 53	–	–	–
PIN 24	2.5	2.5	2.5	PIN 54	–	–	–
PIN 25	2.5	2.5	2.5	PIN 55	–	–	–
PIN 26	0	0	0	PIN 56	–	–	–
PIN 27	2.5	2.5	2.5	PIN 57	–	–	–
PIN 28	2.5	2.5	2.5	PIN 58	0	0	0
PIN 29	0	2.5	2.5	PIN 59	0.2	0.2	0.2
PIN 30	2.5	2.5	2.5	PIN 60	2.5	2.4	2.5

IC301 KA8320


HA.SLT
VP
EFF
AFF
VFF
REF
PWR ON RESET
GND
FSC IN
WRITE
DUTY I/O
CTL CLK
AVDO
CFO IN
CTLP IN
CMP SYNC
ENV.DET
SU6.H
SERIAL DATA
SERIAL CLK
MODE D OUT
MODE E OUT
N.C
C.ROT
MODE OUT C
MODE OUT B
MODE OUT A
DOND
PO M.M.
DRUM PO IN
CTL AMP OUT
SWD
CTL AMP(−)
CTL AMP BIAS
AOND
CTL HEAD(+)
CTL HEAD(−)
N.C
DVDD
CAP MIX OUT
SWE
CAP MIX(−)
SWF
SWO
CAP F/V OUT
DRUM COMMON
DRUM FG IN
DRUM SEL A
DRUM SEL B
DRUM MIX OUT
DRUM MIX AMP(−)
DRUM F/V OUT
GND
DRUM MIX AMP(+)
SWI
DRUM P/D OUT
SWJ
NTSC/PAL
CAP P/D OUT
CAP MIX(+)
SERIAL DEC
DUTY CTL NOISE DET
MODE D OUT E
4HD SWITCHING LOGIC
SYNC SEP NOISE DET
MODE-OUTPUT C B A
FF.VP GEN
PG MM
DRUM REF
CAP REF
DRUM FV
DRUM PD
CAP PD
CAP FV
SW A
SW B
SW C
SW D
SW E
SW F
SW G
SW H
SW I
SW J
SW K
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
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34
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38
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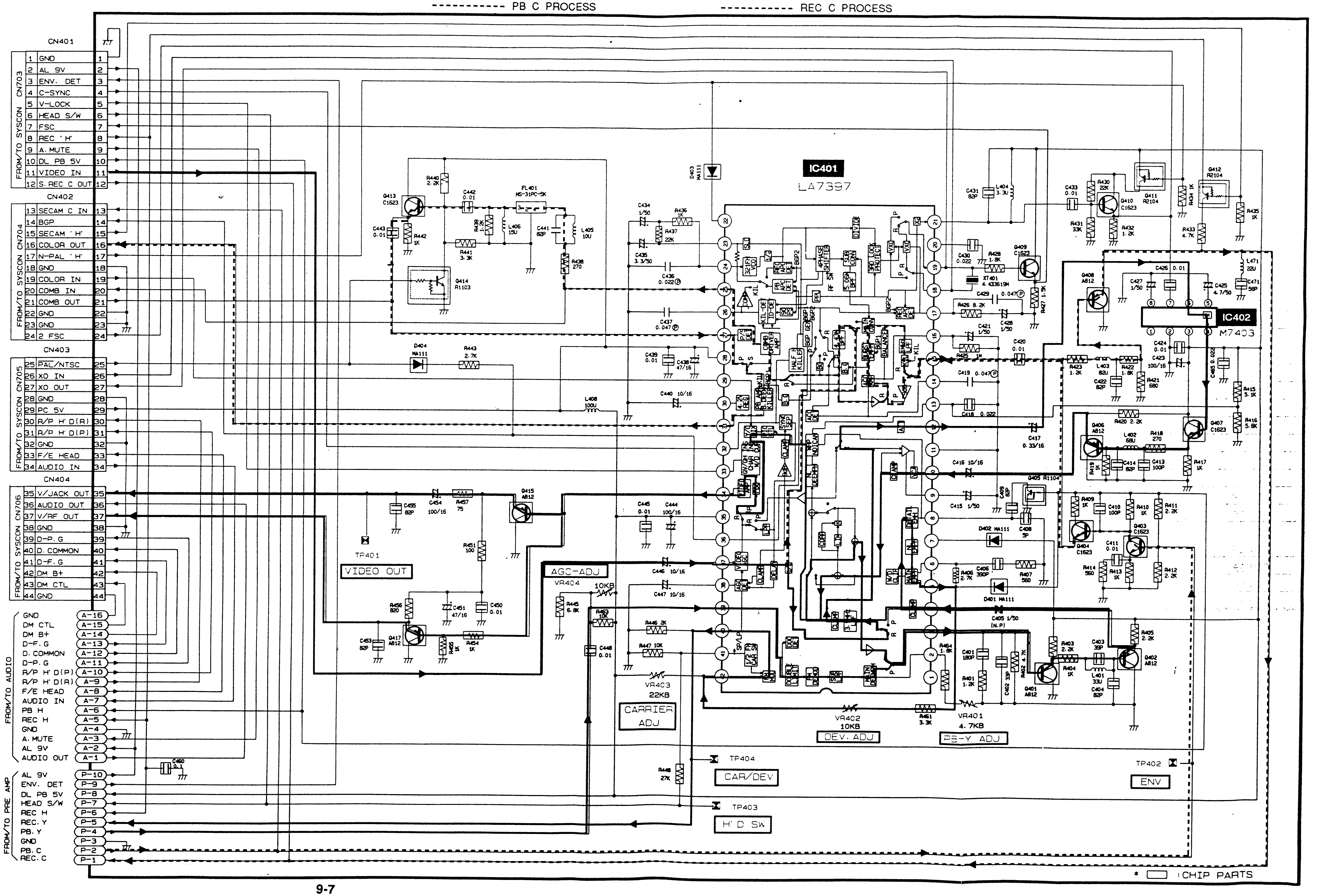
60

9-4. Luminance/Chrominance

RED ——— PB Y PROCESS
- - - - - PB C PROCESS

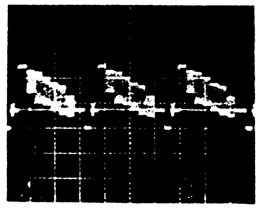
BLUE ——— REC Y PROCESS
- - - - - REC C PROCESS

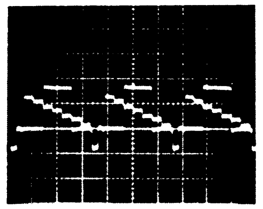

CN401
FROM/TO SYSCON CN703
1 GND
2 AL 9V
3 ENV. DET
4 C-SYNC
5 V-LOCK
6 HEAD S/W
7 FSC
8 REC 'H'
9 A. MUTE
10 DL PB 5V
11 VIDEO IN
12 S.REC C OUT
CN402
FROM/TO SYSCON CN704
13 SECAM C IN
14 BGP
15 SECAM 'H'
16 COLOR OUT
17 N-PAL 'H'
18 GND
19 COLOR IN
20 COMB IN
21 COMB OUT
22 GND
23 GND
24 2 FSC
CN403
FROM/TO SYSCON CN705
25 PAL/NTSC
26 XO IN
27 XO OUT
28 GND
29 PC 5V
30 R/P H' D(R)
31 R/P H' D(P)
32 GND
33 F/E HEAD
34 AUDIO IN
CN404
FROM/TO SYSCON CN706
35 V/JACK OUT
36 AUDIO OUT
37 V/RF OUT
38 GND
39 D-P. G
40 D. COMMON
41 D-F. G
42 DM B+
43 DM CTL
44 GND
FROM/TO AUDIO
GND A-16
DM CTL A-15
DM B+ A-14
D-F. G A-13
D. COMMON A-12
D-P. G A-11
R/P H' D(P) A-10
R/P H' D(R) A-9
F/E HEAD A-8
AUDIO IN A-7
PB H A-6
REC H A-5
GND A-4
A. MUTE A-3
AL 9V A-2
AUDIO OUT A-1
FROM/TO PRE AMP
AL 9V P-10
ENV. DET P-9
DL PB 5V P-8
HEAD S/W P-7
REC H P-6
REC. Y P-5
PB. Y P-4
GND P-3
PB. C P-2
REC. C P-1
IC401
LA7397
IC402
M7403
Q413 C1623
Q414 R1103
FL401 MS-31PC-5K
Q415 A812
Q417 A812
D404 MA111
D403 MA111
TP401
VIDEO OUT
AGC-ADJ
VR404 10KB
VR403 22KB
CARRIER ADJ
VR402 10KB
DEV. ADJ
VR401 4.7KB
PB-Y ADJ
TP404
CAR/DEV
TP403
H' D SW
TP402
ENV
XT401 4.433619M
Q409 C1623
Q408 A812
Q410 C1623
Q411 R2104
Q412 R2104
Q406 A812
Q407 C1623
Q405 R1104
Q403 C1623
Q404 C1623
Q401 A812
Q402 A812
D402 MA111
D401 MA111

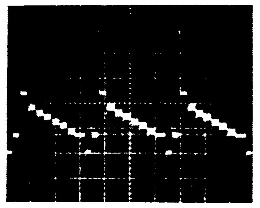
* ☐ :CHIP PARTS

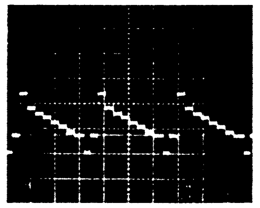
IC401

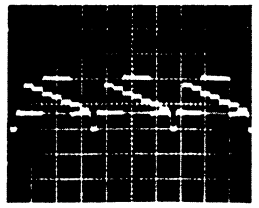
MODE / PIN NO	STOP	REC	PLAY	MODE / PIN NO	STOP	REC	PLAY
PIN 1	0	0	0	PIN 22	0	0	0
PIN 2	0	0	2.0	PIN 23	2.0	2.0	3.4
PIN 3	1.9	1.9	2.0	PIN 24	2.0	2.0	3.4
PIN 4	2.3	2.3	2.5	PIN 25	2.3	2.3	2.3
PIN 5	2.3	2.3	4.2	PIN 26	2.0	2.0	2.0
PIN 6	2.3	2.3	4.2	PIN 27	2.0	2.0	2.0
PIN 7	4.2	4.2	4.2	PIN 28	4.8	4.8	4.8
PIN 8	1.8	1.9	2.3	PIN 29	0	0	0
PIN 9	2.3	2.3	3.6	PIN 30	4.2	4.2	4.2
PIN 10	2.0	2.0	2.0	PIN 31	2.5	2.5	2.5
PIN 11	0	0	0	PIN 32	3.9	3.9	0.5
PIN 12	1.8	1.8	2.0	PIN 33	4.1	4.1	0
PIN 13	2.5	2.5	2.5	PIN 34	0.9	0.9	2.0
PIN 14	0.9	0.9	1.6	PIN 35	4.8	4.8	4.8
PIN 15	2.9	2.9	2.9	PIN 36	0.2	0.2	0.5
PIN 16	1.8	1.8	2.3	PIN 37	3.1	3.1	3.1
PIN 17	2.3	2.3	2.3	PIN 38	1.5	1.5	1.5
PIN 18	3.6	3.6	3.6	PIN 39	3.4	3.4	3.4
PIN 19	2.3	2.3	2.3	PIN 40	3.1	2.9	3.4
PIN 20	1.6	1.6	1.6	PIN 41	0.2	0.2	0.5
PIN 21	4.8	4.8	4.8	PIN 42	2.3	2.3	2.3

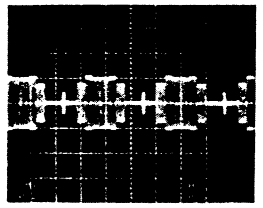

IC401-3
0.5Vp-p
REC

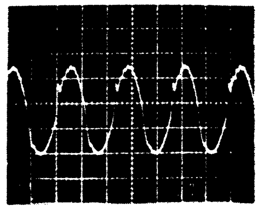

IC401-4
0.5Vp-p
PB/REC

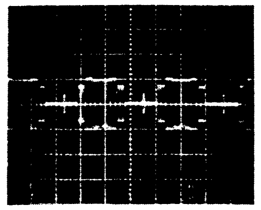

IC401-5
1.2Vp-p
REC

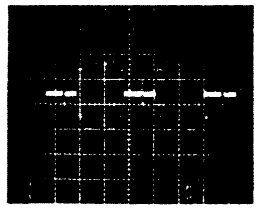

IC401-6
0.5Vp-p
REC

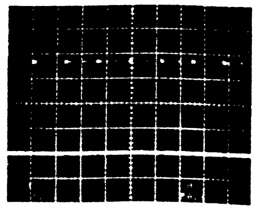

IC401-10
0.4Vp-p
PB

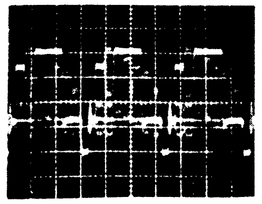

IC401-15
0.4Vp-p
REC

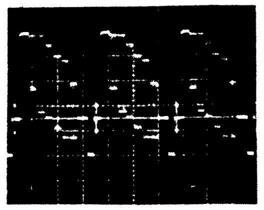

IC401-18
0.6Vp-p
PB/REC

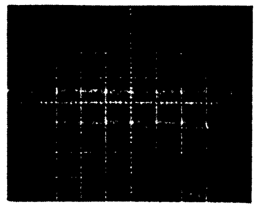

IC401-25
1Vp-p
REC

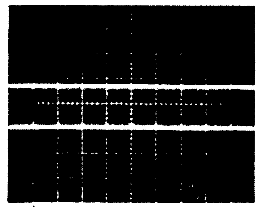

IC401-27
130mVp-p
REC

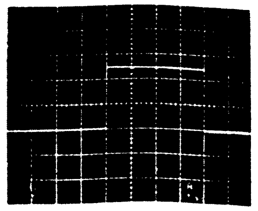

IC401-32
4Vp-p
PB


IC401-34
2Vp-p
PB

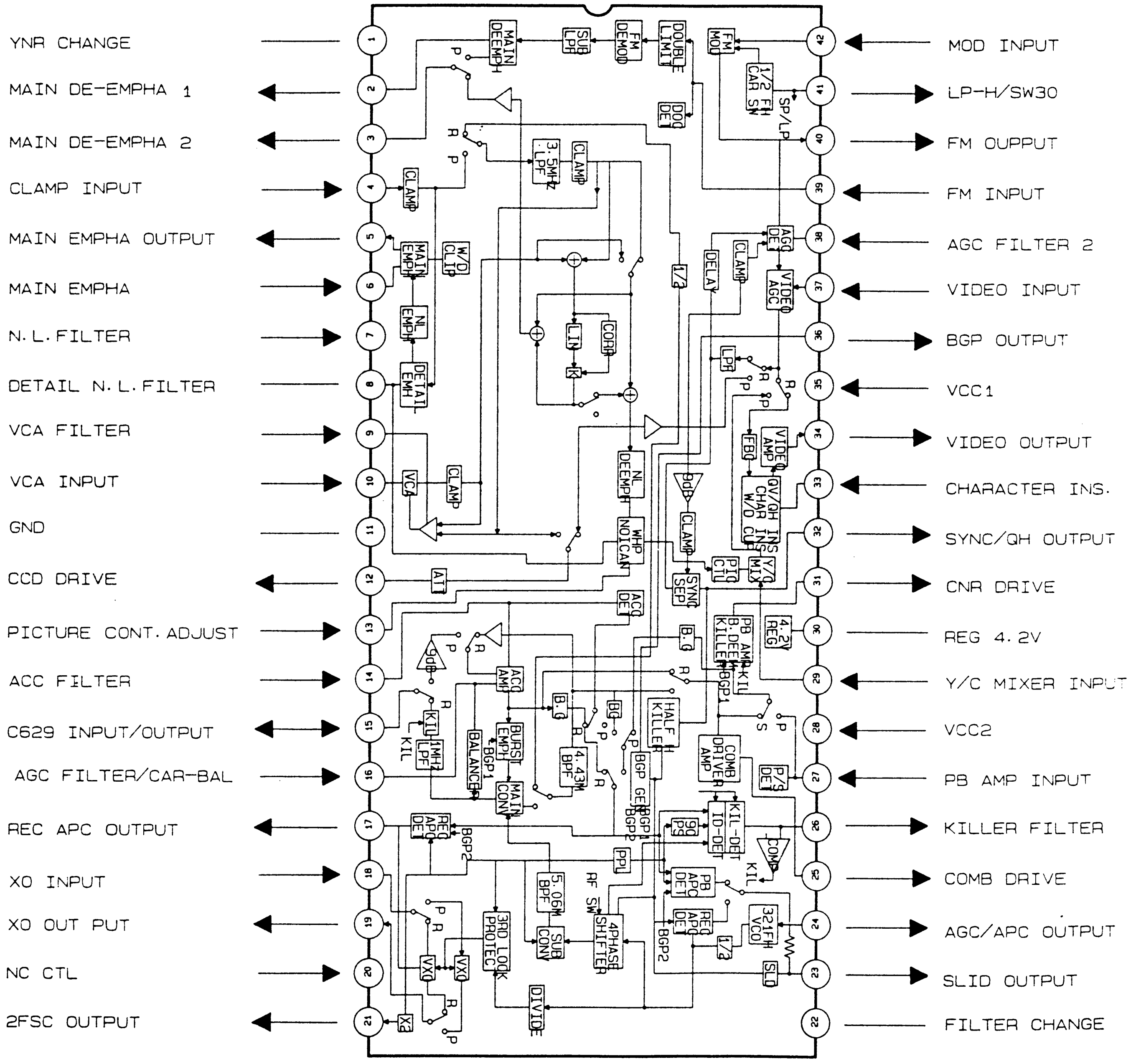

IC401-37
1Vp-p
REC


IC401-39
0.3Vp-p
PB

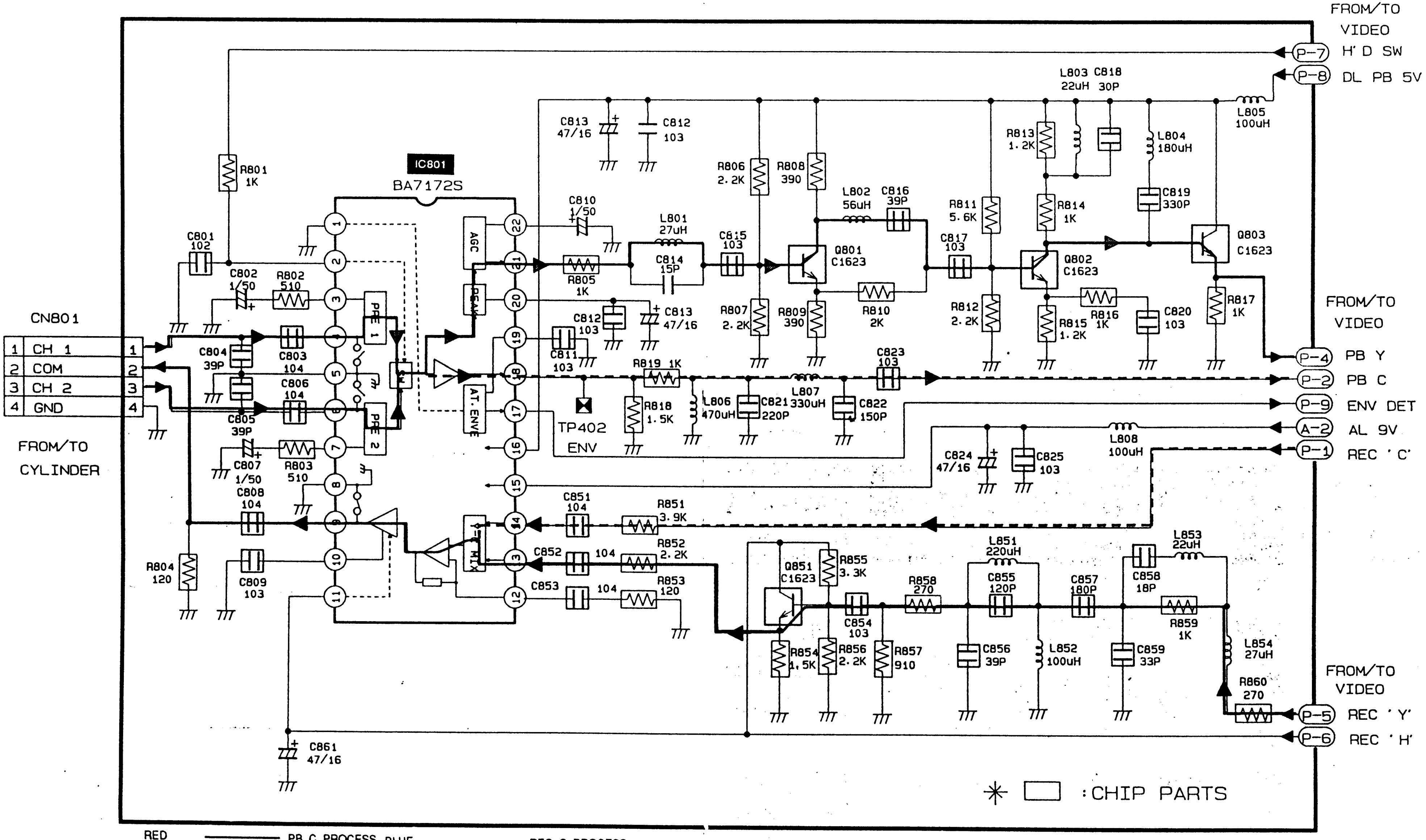

IC401-40
0.8Vp-p
REC


IC401-41
1.2Vp-p
PB/REC

IC401 LA7397


YNR CHANGE
MAIN DE-EMPHA 1
MAIN DE-EMPHA 2
CLAMP INPUT
MAIN EMPHA OUTPUT
MAIN EMPHA
N.L.FILTER
DETAIL N.L.FILTER
VCA FILTER
VCA INPUT
GND
CCD DRIVE
PICTURE CONT.ADJUST
ACC FILTER
C629 INPUT/OUTPUT
AGC FILTER/CAR-BAL
REC APC OUTPUT
XO INPUT
XO OUT PUT
NC CTL
2FSC OUTPUT
MOD INPUT
LP-H/SW30
FM OUPPUT
FM INPUT
AGC FILTER 2
VIDEO INPUT
BGP OUTPUT
VCC1
VIDEO OUTPUT
CHARACTER INS.
SYNC/QH OUTPUT
CNR DRIVE
REG 4.2V
Y/C MIXER INPUT
VCC2
PB AMP INPUT
KILLER FILTER
COMB DRIVE
AGC/APC OUTPUT
SLID OUTPUT
FILTER CHANGE

9-5. Pre-Amp


FROM/TO VIDEO
P-7 H' D SW
P-8 DL PB 5V
L803 22uH
C818 30P
L805 100uH
C813 47/16
C812 103
R801 1K
IC801
BA7172S
R806 2.2K
R808 390
R813 1.2K
L804 180uH
R814 1K
C819 330P
R811 5.6K
L802 56uH
C816 39P
C810 1/50
L801 27uH
C815 103
C817 103
Q801 C1623
Q802 C1623
Q803 C1623
C801 102
C802 1/50
R802 510
C814 15P
R805 1K
AGC
PEAK
PRE 1
PRE 2
AT. ENVE
Y-C MIX
C812 103
C813 47/16
R807 2.2K
R809 390
R810 2K
R812 2.2K
R815 1.2K
R816 1K
C820 103
R817 1K
CN801
1 CH 1
2 COM
3 CH 2
4 GND
C804 39P
C803 104
C806 104
C805 39P
C811 103
R819 1K
C823 103
L807 330uH
R818 1.5K
L806 470uH
C821 220P
C822 150P
TP402
ENV
FROM/TO VIDEO
P-4 PB Y
P-2 PB C
P-9 ENV DET
A-2 AL 9V
P-1 REC ' C'
L808 100uH
C824 47/16
C825 103
FROM/TO CYLINDER
C807 1/50
R803 510
C808 104
C851 104
R851 3.9K
R804 120
C809 103
C852 104
R852 2.2K
C853 104
R853 120
L851 220uH
L853 22uH
Q851 C1623
R855 3.3K
R858 270
C855 120P
C857 180P
C858 18P
C854 103
R859 1K
R854 1.5K
R856 2.2K
R857 910
C856 39P
L852 100uH
C859 33P
L854 27uH
R860 270
FROM/TO VIDEO
P-5 REC ' Y'
P-6 REC ' H'
C861 47/16
✳ ☐ :CHIP PARTS

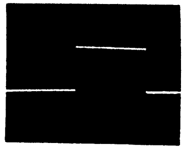
RED ———— PB C PROCESS
-------- PB Y PROCESS

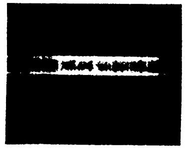
BLUE ———— REC C PROCESS
-------- REC Y PROCESS

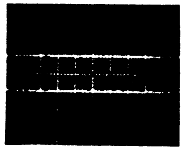
SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

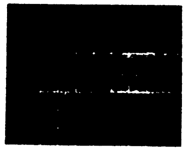
NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

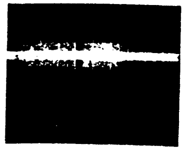
IC801							
MODE / PIN NO	STOP	REC	PLAY	MODE / PIN NO	STOP	REC	PLAY
PIN 1	0	0	0	PIN 12	7.9	4.4	7.9
PIN 2	1-3	1-3	1-3	PIN 13	5.3	5.1	5.3
PIN 3	0	0	0.8	PIN 14	5.3	5.1	5.3
PIN 4	0	0	0.8	PIN 15	9.0	8.7	9.0
PIN 5	0	0	0	PIN 16	0	0	4.2
PIN 6	0	0	0.8	PIN 17	0	0	1.2
PIN 7	0	0	0.8	PIN 18	0	0	2.4
PIN 8	0	0	0	PIN 19	0	0	1.9
PIN 9	0	4.4	0	PIN 20	0	0	4.6
PIN 10	0	4.4	0	PIN 21	0	0	2.4
PIN 11	0	4.8	0	PIN 22	0.3	0	2.9

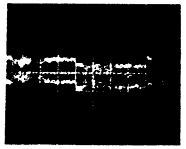

IC801-2
5Vp-p
PB

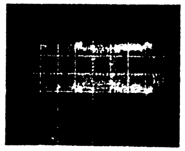

IC801-4, 6
50mVp-p
REC


IC801-9
4Vp-p
REC

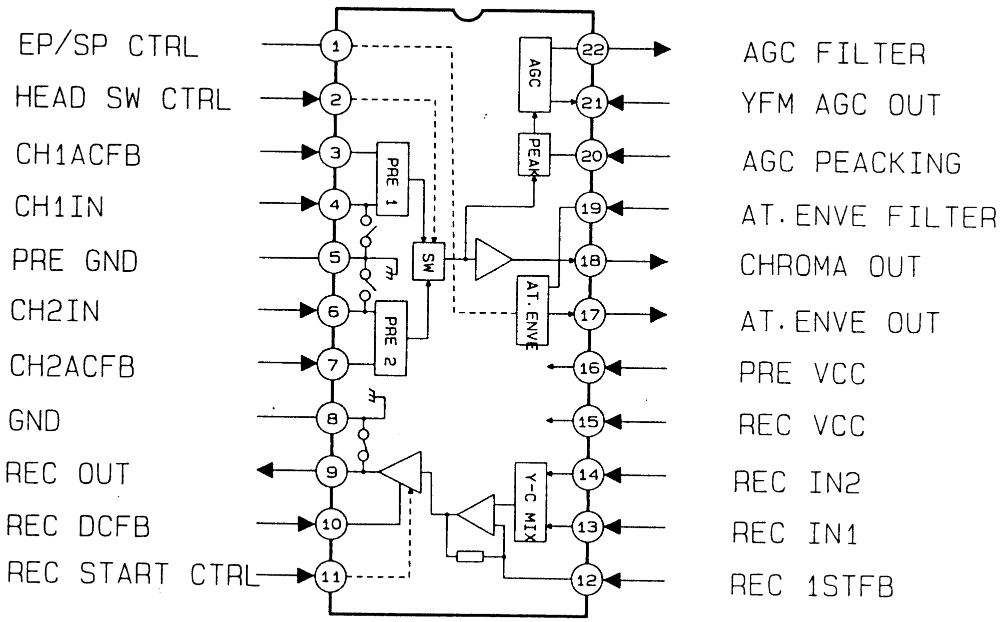

IC801-13
120mVp-p
REC


IC801-14
40mVp-p
REC


IC801-18
160mVp-p
PB

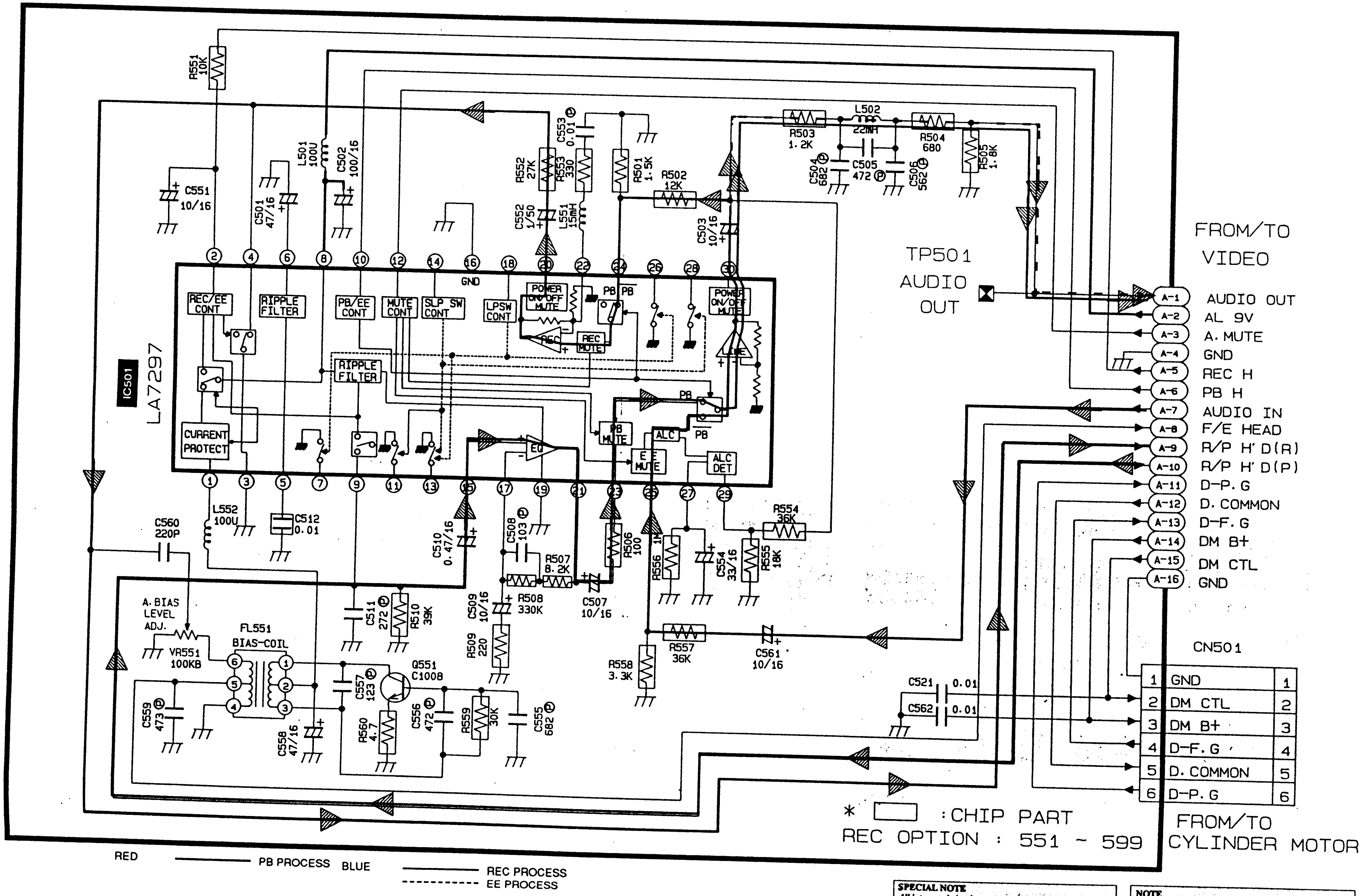

IC801-21
300mVp-p
PB

IC801 BA7172S


EP/SP CTRL
HEAD SW CTRL
CH1ACFB
CH1IN
PRE GND
CH2IN
CH2ACFB
GND
REC OUT
REC DCFB
REC START CTRL
1
2
3
4
5
6
7
8
9
10
11
22
21
20
19
18
17
16
15
14
13
12
AGC
PEAK
PRE 1
PRE 2
SW
AT. ENVE
Y-C MIX
AGC FILTER
YFM AGC OUT
AGC PEACKING
AT. ENVE FILTER
CHROMA OUT
AT. ENVE OUT
PRE VCC
REC VCC
REC IN2
REC IN1
REC 1STFB

AUDIO **AUDIO** **AUDIO**

9-6. Audio



R551 10K
L501 100U
C502 100/16
C551 10/16
C501 47/16
C553 0.01
R552 27K
R553 330
R501 1.5K
R502 12K
C552 1/50
L551 15mH
C503 10/16
R503 1.2K
L502 22mH
R504 680
R505 1.8K
C504 682
C505 472
C506 562
TP501 AUDIO OUT
FROM/TO VIDEO
A-1 AUDIO OUT
A-2 AL 9V
A-3 A. MUTE
A-4 GND
A-5 REC H
A-6 PB H
A-7 AUDIO IN
A-8 F/E HEAD
A-9 R/P H'D(R)
A-10 R/P H'D(P)
A-11 D-P.G
A-12 D.COMMON
A-13 D-F.G
A-14 DM B+
A-15 DM CTL
A-16 GND
IC501 LA7297
REC/EE CONT
RIPPLE FILTER
PB/EE CONT
MUTE CONT
SLP SW CONT
LPSW CONT
GND
POWER ON/OFF MUTE
REC
REC MUTE
PB
POWER ON/OFF MUTE
LINE
CURRENT PROTECT
EQ
PB MUTE
ALC
EE MUTE
ALC DET
C560 220P
L552 100U
C512 0.01
C510 0.47/16
C508 103
R507 8.2K
R506 100
R556 1K
C554 33/16
R554 36K
R555 18K
R508 330K
C507 10/16
C509 10/16
R509 220
C511 272
R510 39K
A.BIAS LEVEL ADJ.
VR551 100KB
FL551 BIAS-COIL
Q551 C1008
C557 123
C559 473
C558 47/16
R560 4.7
C556 472
R559 30K
C555 682
R558 3.3K
R557 36K
C561 10/16
C521 0.01
C562 0.01
CN501
1 GND 1
2 DM CTL 2
3 DM B+ 3
4 D-F.G 4
5 D.COMMON 5
6 D-P.G 6
FROM/TO CYLINDER MOTOR
* ☐ : CHIP PART
REC OPTION : 551 ~ 599
RED
PB PROCESS
BLUE
REC PROCESS
EE PROCESS

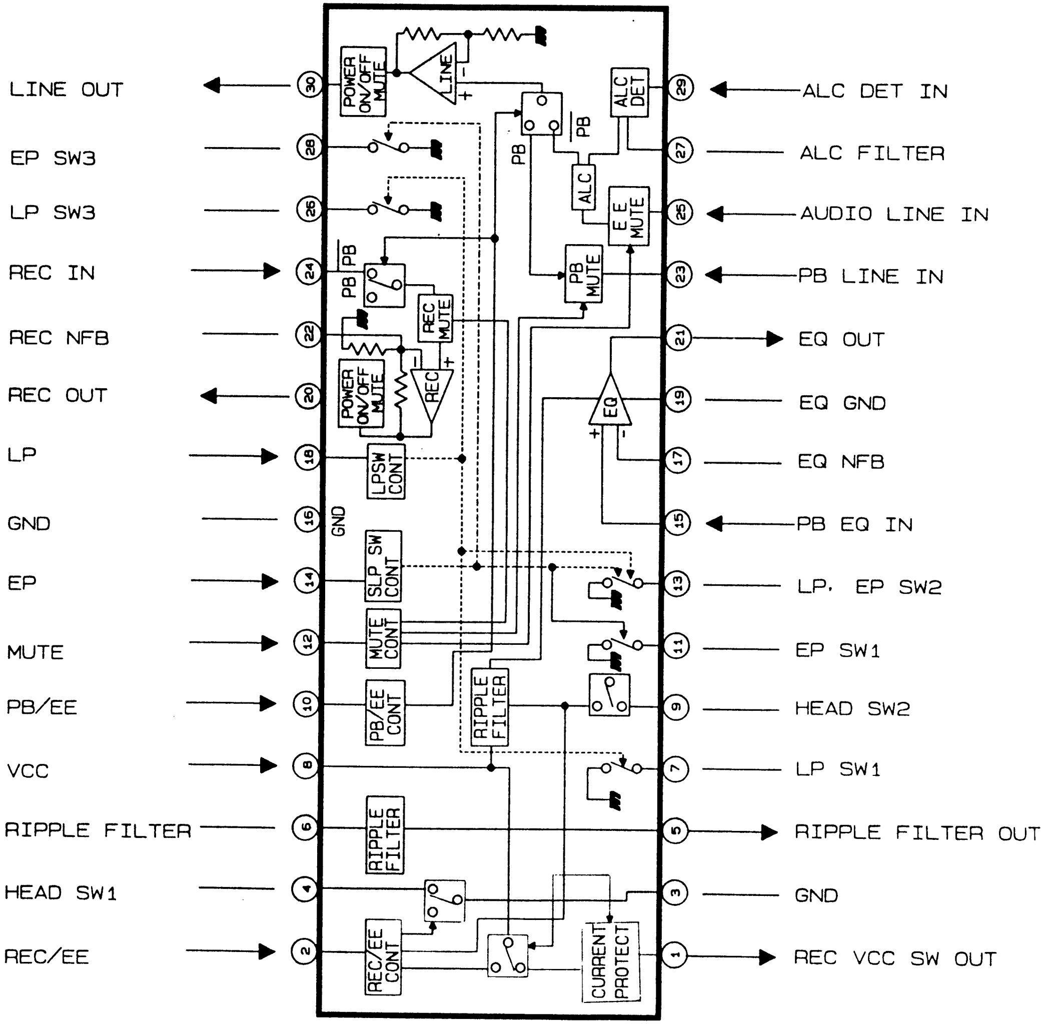
SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

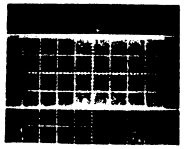
NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

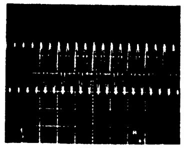
IC501

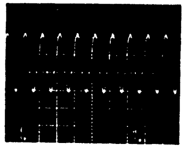
PIN NO \ MODE	STOP	REC	PLAY	PIN NO \ MODE	STOP	REC	PLAY
PIN 1	0.3	8.1	0.3	PIN 16	0	0	0
PIN 2	0	4.4	0	PIN 17	2.3	2.3	2.3
PIN 3	0	0	0	PIN 18	0	0	0
PIN 4	0	0	0	PIN 19	0	0	0
PIN 5	7.7	7.7	7.7	PIN 20	3.8	3.8	3.8
PIN 6	8.9	8.9	8.9	PIN 21	2.3	2.3	2.3
PIN 7	0	0	0	PIN 22	1.3	1.3	1.3
PIN 8	8.9	8.9	8.9	PIN 23	0	0	0
PIN 9	0	0	0	PIN 24	0	0	0
PIN 10	0	0	4.7	PIN 25	0	0	0
PIN 11	0	0	0	PIN 26	0	0	0
PIN 12	3.7	3.7	0	PIN 27	0.3	0.5	0.3
PIN 13	0	0	0	PIN 28	0	0	0
PIN 14	0	0	0	PIN 29	0	0	0
PIN 15	2.3	2.3	2.3	PIN 30	4.0	4.0	4.0

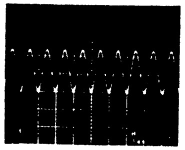
IC501 LA7297


LINE OUT 30
EP SW3 28
LP SW3 26
REC IN 24
REC NFB 22
REC OUT 20
LP 18
GND 16
EP 14
MUTE 12
PB/EE 10
VCC 8
RIPPLE FILTER 6
HEAD SW1 4
REC/EE 2
29 ALC DET IN
27 ALC FILTER
25 AUDIO LINE IN
23 PB LINE IN
21 EQ OUT
19 EQ GND
17 EQ NFB
15 PB EQ IN
13 LP, EP SW2
11 EP SW1
9 HEAD SW2
7 LP SW1
5 RIPPLE FILTER OUT
3 GND
1 REC VCC SW OUT
POWER ON/OFF MUTE
LINE
ALC DET
PB
PB
ALC
E E MUTE
PB PB
PB MUTE
REC MUTE
POWER ON/OFF MUTE
REC
EQ
LPSW CONT
GND
SLP SW CONT
MUTE CONT
PB/EE CONT
RIPPLE FILTER
RIPPLE FILTER
REC/EE CONT
CURRENT PROTECT

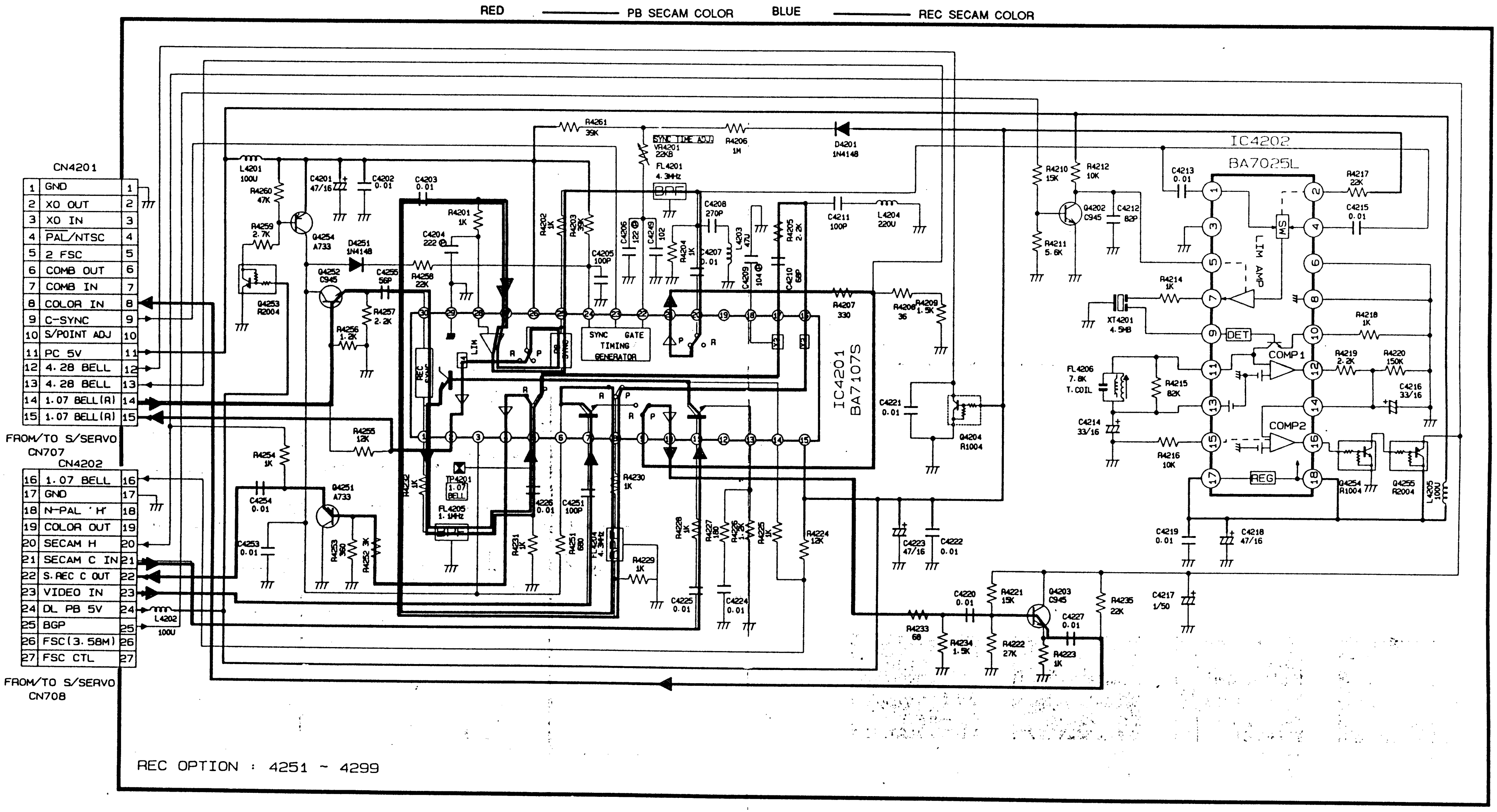

IC501-4
42Vp-p
REC


IC501-20
1.3Vp-p
STOP


IC501-25
60mVp-p
STOP


IC501-30
1.24Vp-p
STOP

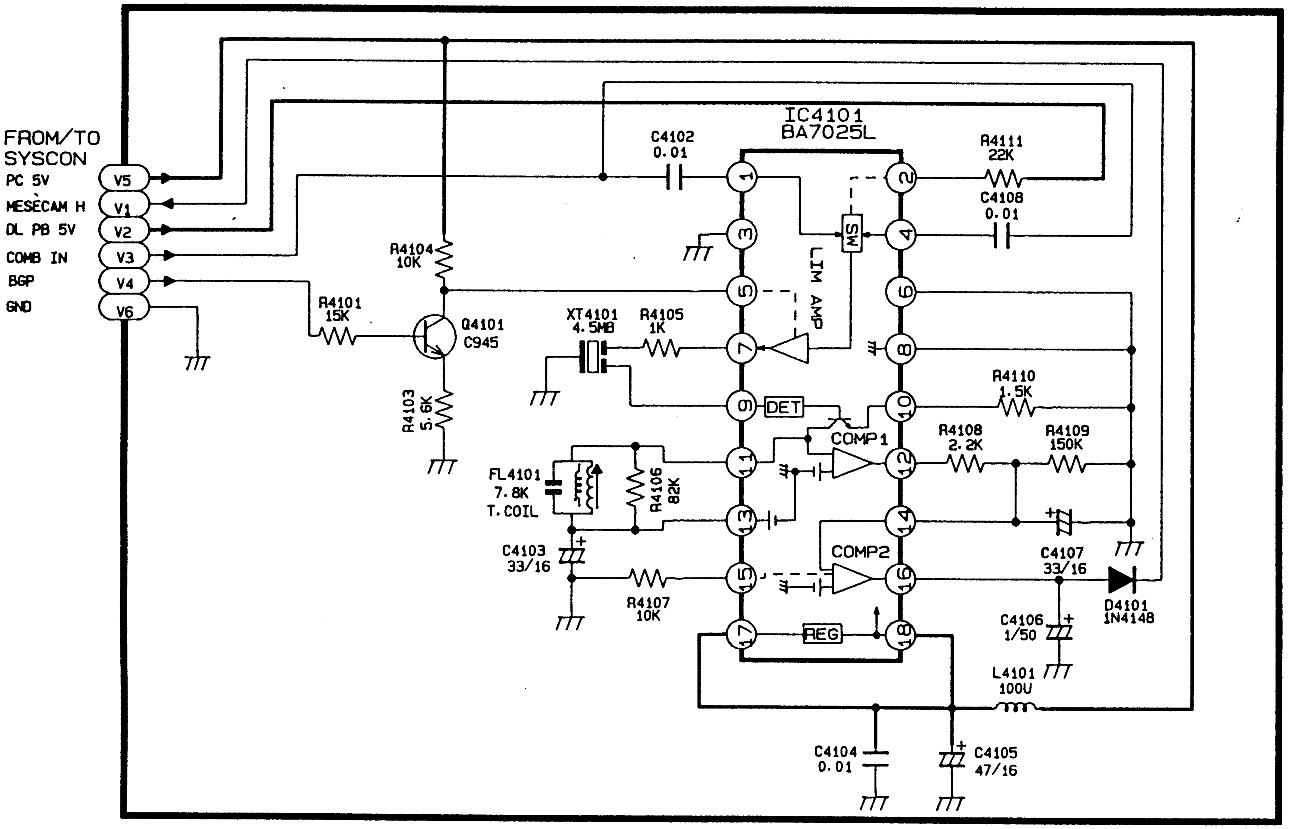
9-7. SECAM


RED ——— PB SECAM COLOR
BLUE ——— REC SECAM COLOR
CN4201
1 GND 1
2 XO OUT 2
3 XO IN 3
4 PAL/NTSC 4
5 2 FSC 5
6 COMB OUT 6
7 COMB IN 7
8 COLOR IN 8
9 C-SYNC 9
10 S/POINT ADJ 10
11 PC 5V 11
12 4.28 BELL 12
13 4.28 BELL 13
14 1.07 BELL(R) 14
15 1.07 BELL(R) 15
FROM/TO S/SERVO CN707
CN4202
16 1.07 BELL 16
17 GND 17
18 N-PAL 'H' 18
19 COLOR OUT 19
20 SECAM H 20
21 SECAM C IN 21
22 S.REC C OUT 22
23 VIDEO IN 23
24 DL PB 5V 24
25 BGP 25
26 FSC(3.58M) 26
27 FSC CTL 27
FROM/TO S/SERVO CN708
L4201 100U
R4260 47K
R4259 2.7K
Q4254 A733
Q4253 R2004
C4201 47/16
C4202 0.01
C4203 0.01
D4251 1N4148
Q4252 C945
C4255 56P
R4258 22K
R4257 2.2K
R4256 1.2K
R4201 1K
C4204 222
R4261 39K
R4202 1K
R4203 39K
C4205 100P
C4206 122
C4249 102
SYNC TIME ADJ.
VR4201 22KB
FL4201 4.3MHz
BPF
R4206 1M
D4201 1N4148
C4208 270P
R4204 1K
C4207 0.01
L4203 47U
C4209 104
R4205 2.2K
C4210 68P
C4211 100P
L4204 220U
R4207 330
R4208 36
R4209 1.5K
REC SYNC
LIM
R P
PB SYNC
SYNC GATE TIMING GENERATOR
IC4201 BA7107S
C4221 0.01
Q4204 R1004
R4255 12K
R4254 1K
C4254 0.01
Q4251 A733
C4253 0.01
R4253 360
R4252 3K
R4232 1K
TP4201 1.07 BELL
FL4205 1.1MHz
4226 0.01
C4251 100P
R4231 1K
R4251 680
FL4204 4.3MHz
R4230 1K
R4229 1K
R4228 1K
R4227 180
R4226 1.2K
R4225 1K
R4224 12K
C4225 0.01
C4224 0.01
C4223 47/16
C4222 0.01
L4202 100U
R4210 15K
R4212 10K
R4211 5.6K
Q4202 C945
C4212 82P
IC4202 BA7025L
C4213 0.01
R4217 22K
C4215 0.01
SW
LIM AMP
R4214 1K
XT4201 4.5MB
DET
R4218 1K
COMP1
R4219 2.2K
R4220 150K
FL4206 7.8K T.COIL
R4215 82K
C4216 33/16
C4214 33/16
COMP2
R4216 10K
REG
Q4254 R1004
Q4255 R2004
L4205 100U
C4219 0.01
C4218 47/16
C4220 0.01
R4221 15K
Q4203 C945
R4235 22K
C4217 1/50
C4227 0.01
R4233 68
R4234 1.5K
R4222 27K
R4223 1K
REC OPTION : 4251 ~ 4299

SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

9-8. MESECAM DET.


FROM/TO SYSCON
PC 5V
MESECAM H
DL PB 5V
COMB IN
BGP
GND
V5
V1
V2
V3
V4
V6
IC4101
BA7025L
C4102
0.01
R4111
22K
C4108
0.01
R4104
10K
R4101
15K
Q4101
C945
R4103
5.6K
XT4101
4.5MB
R4105
1K
MS
LIM AMP
DET
COMP1
COMP2
REG
R4110
1.5K
R4108
2.2K
R4109
150K
FL4101
7.8K
T.COIL
R4106
82K
C4103
33/16
R4107
10K
C4107
33/16
D4101
1N4148
C4106
1/50
L4101
100U
C4104
0.01
C4105
47/16

SPECIAL NOTE
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NOTE
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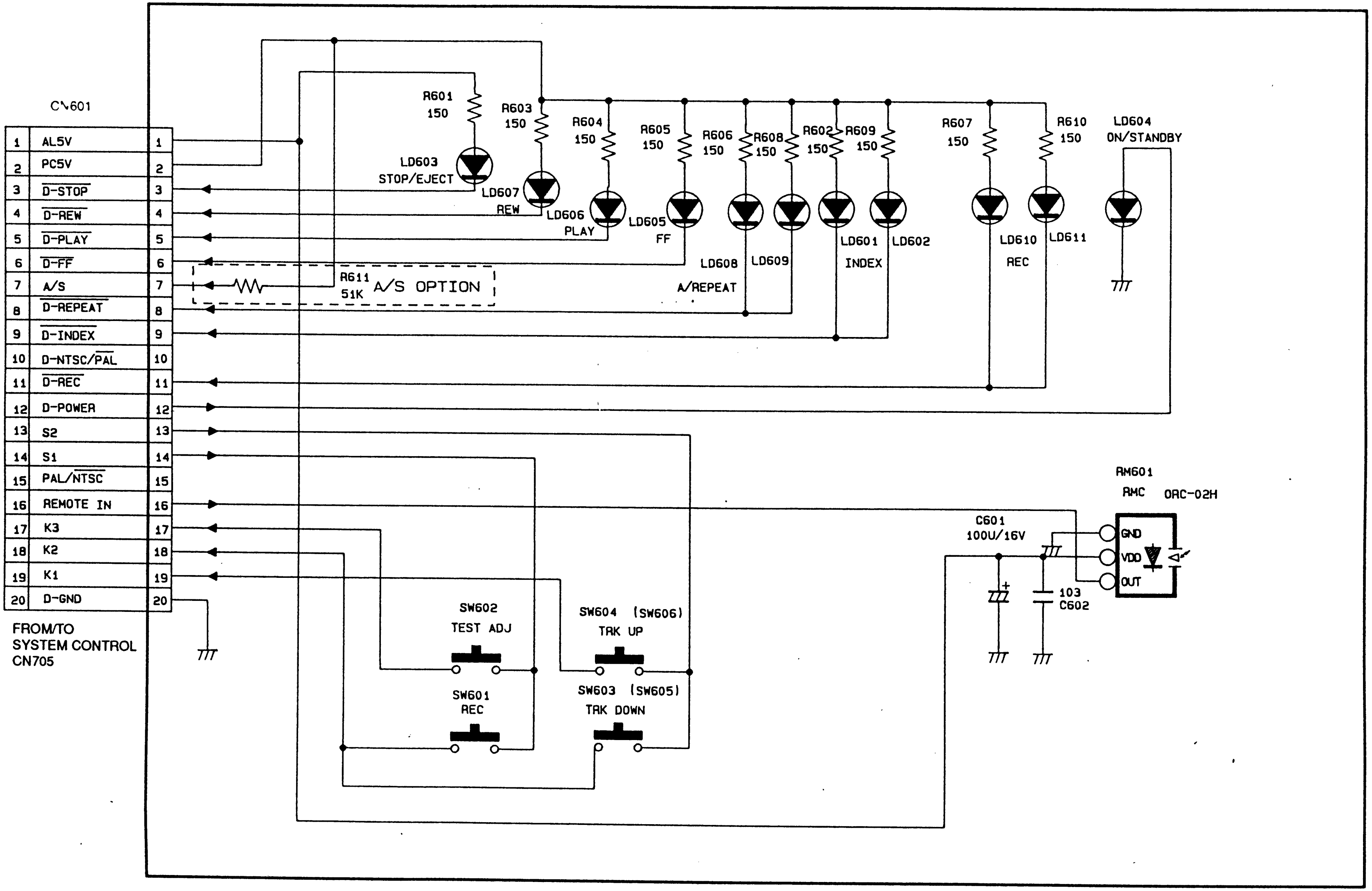
IC4101

MODE / PIN NO	STOP	REC	PLAY	MODE / PIN NO	STOP	REC	PLAY
PIN 1	3.6	3.6	3.6	PIN 10	0	0	0
PIN 2	0	0	0	PIN 11	3.9	3.9	3.6
PIN 3	0	0	0	PIN 12	0	0	0
PIN 4	3.6	3.6	3.6	PIN 13	3.9	3.9	3.6
PIN 5	5.0	5.0	4.5	PIN 14	0	0	0
PIN 6	0	0	0	PIN 15	0	0	0
PIN 7	4.5	4.5	4.5	PIN 16	1.5	1.5	1.5
PIN 8	0	0	0	PIN 17	5.0	5.0	5.0
PIN 9	3.1	3.1	3.1	PIN 18	5.0	5.0	5.0

9-9. Function


CN601
1 AL5V
2 PC5V
3 D-STOP
4 D-REW
5 D-PLAY
6 D-FF
7 A/S
8 D-REPEAT
9 D-INDEX
10 D-NTSC/PAL
11 D-REC
12 D-POWER
13 S2
14 S1
15 PAL/NTSC
16 REMOTE IN
17 K3
18 K2
19 K1
20 D-GND
FROM/TO
SYSTEM CONTROL
CN705
R601 150
R603 150
R604 150
R605 150
R606 150
R608 150
R602 150
R609 150
R607 150
R610 150
LD603 STOP/EJECT
LD607 REW
LD606 PLAY
LD605 FF
LD608
LD609
A/REPEAT
LD601
LD602
INDEX
LD610
LD611
REC
LD604 ON/STANDBY
R611 51K
A/S OPTION
RM601
RMC ORC-02H
GND
VDD
OUT
C601 100U/16V
103 C602
SW602 TEST ADJ
SW601 REC
SW604 (SW606) TRK UP
SW603 (SW605) TRK DOWN

SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

NOTE
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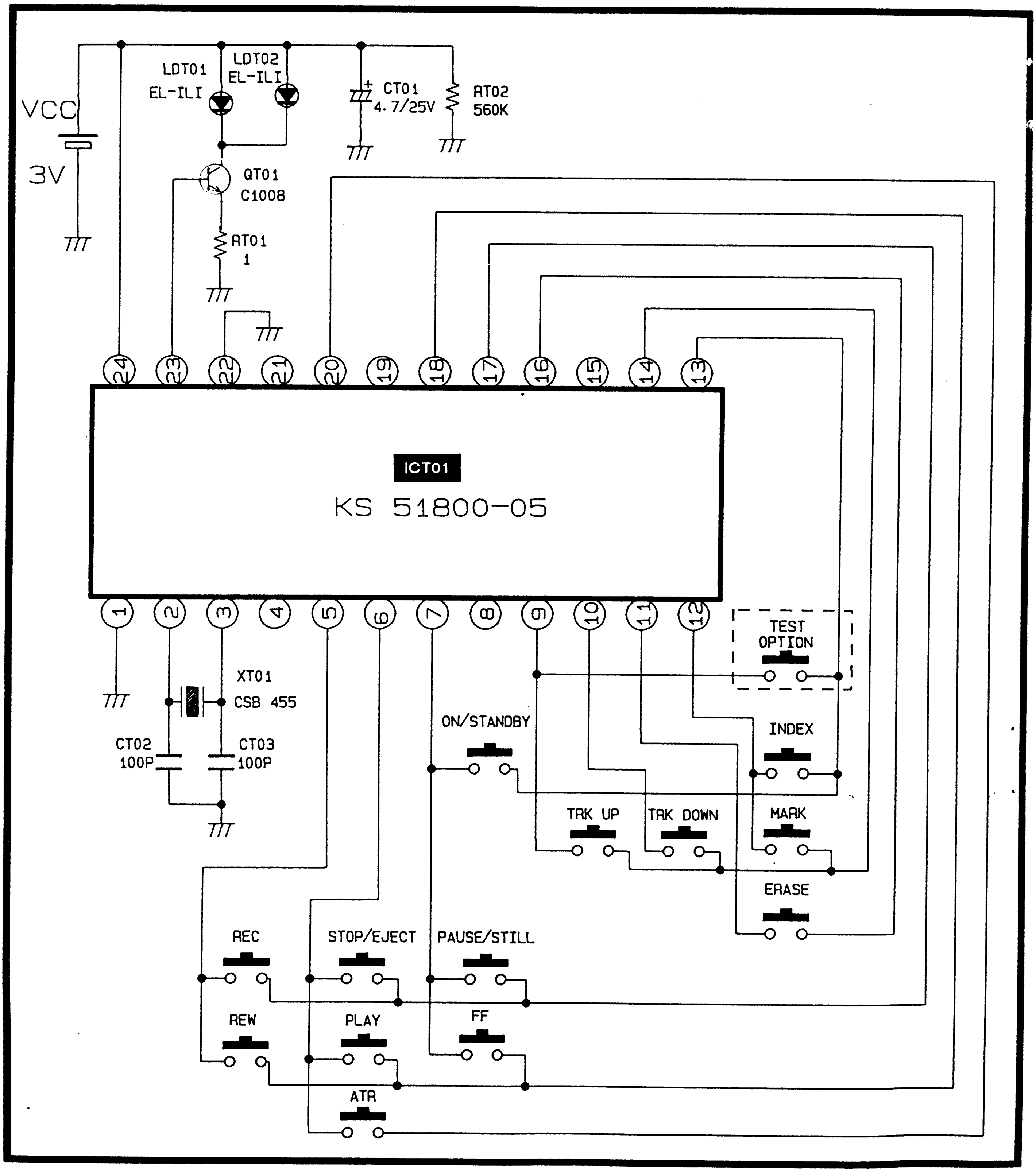
9-10. Remote Control


VCC
3V
LDT01
EL-ILI
LDT02
EL-ILI
CT01
4.7/25V
RT02
560K
QT01
C1008
RT01
1
24
23
22
21
20
19
18
17
16
15
14
13
ICT01
KS 51800-05
1
2
3
4
5
6
7
8
9
10
11
12
XT01
CSB 455
CT02
100P
CT03
100P
TEST
OPTION
ON/STANDBY
INDEX
TRK UP
TRK DOWN
MARK
ERASE
REC
STOP/EJECT
PAUSE/STILL
REW
PLAY
FF
ATR

SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.